

DAILY METAL REPORTER

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# METALS

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American Smelting & Refining Company

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Aluminum Company of America

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## Two LINE Editorials

Everybody seems to be agreed that the Presidency is an impossible burdensome, killing job — but it's astonishing how many patriotic politicians are willing to take the chance of being killed that way.

A New York editor says that Rockefeller and Nixon would make an ideal ticket for the Republicans, but that neither of them would consent to run for Vice President. Why not let the two of them run for co-President?

The only thing we can conclude after reading all the publicity for the 1960 automobiles is that every automobile is better than any of the others.

The fact that modern school children are not being taught to read may be a fortunate thing when we consider all the stuff they might be reading if they could read.

A statistician estimates that all the lumber cut in the United States in the past 200 years would build a six-foot boardwalk to the moon. And wouldn't that be an easier way to get there than shooting a man there in a rocket?

A New York jeweler advertises a solid gold putter that sells for \$1,475 — and if you had one of them you'd think twice before throwing it out of sight after missing a two-foot putt.

# Washington Report



March 22, 1960

**T**HE battle over aid to the domestic lead and zinc industries will resume shortly on both the legislative and administrative fronts. The House Interior Committee will hold hearings March 28 and 29 on bills designed to stabilize the mining of lead and zinc by small domestic producers. Generally speaking the measures under consideration provide for stabilization payments to small producers when lead is below 17 cents a pound at New York and Prime Western zinc is under 14.50 cents a pound at East St. Louis. Two days after these hearings end — on March 31 — the Tariff Commission is scheduled to hand down its report on whether further assistance is required for the U. S. lead and zinc industries.

In an action which apparently foreshadows the decision on lead and zinc, the Tariff Commission by a three-to-two vote refused to comply with a Senate Finance Committee demand for specific recommendations for fluorspar import curbs.

The Senate group had asked the commission to study the fluorspar and lead and zinc industries and to suggest changes in tariff treatment if further protection were found necessary for the domestic producers.

Speaking for the majority of the commission, Chairman Joseph Talbot said Section 332 of the 1930 law under which the Senate group made its request for recommendations was not so intended by the Congress which wrote it. The two dissenters on the commission said they could not deny the Senate groups demand but ruled against new import curbs since they "manifestly could not contribute to the soundness and stability of the domestic fluorspar industry."

Sen. James E. Murray (Dem., Mont.), chairman of the Interior Committee, who had insisted that the commission had the power to make recommendations, said he was "dumbfounded" by the Tariff group majority's position. He said their decision "will lead to serious repercussions and a close look by the Senate at the budget requests of the Tariff Commission."

## Canada Voices Concern

Another viewpoint was registered

when Canadian officials voiced continued concern over the U. S. quota restrictions on lead and zinc imports during two days of top-level trade discussions here.

A joint communique issued after the talks, which were between Cabinet officials of the two countries, said the Canadian Ministers had urged that the import limitations be withdrawn and no other barriers to trade be placed in the way of sales of lead and zinc to the U. S.

The communique noted that a United Nations Study Group had recently reported a good balance in the supply and demand position for zinc and some improvement in this respect for lead.

The U. S. representatives had noted the Canadian views and pointed out that, while the restrictions could not be withdrawn until there had been a substantial improvement in the distressed segments of the U. S. lead and zinc mining industries, the question of import treatment of lead and zinc was under continuous review and was now before the U. S. Tariff Commission as well, the communique said.

The meeting, attended by Ronald Fleming, Canadian Minister of Finance, and Christian Herter, the U. S. Secretary of State, together with other Cabinet officials of the two countries, was the fifth annual meeting of the Joint U. S.-Canadian Committee on Trade and Economic Affairs.

## Asks End of Copper Duty

Copper also made news on the international scene when Chile's President Alessandri suggested to President Eisenhower during his Chilean visit that the United States drop its 1.7c import duty on Chilean copper that is imported into this country.

President Eisenhower is reported to have offered to study the matter.

Washington authorities point out that the question of dropping import duty on copper lies in the domain of Congress. It would necessitate legislation to suspend the duty. Even if the President were to suggest such legislation (which is deemed extremely doubtful) the chances of favorable action by Congress are said to be nil.

President Eisenhower also assured the Chilean President that the United States has no intention of liquidating its copper stockpile.

## Situation on Stockpile

This position on the stockpile was stressed by Russell H. Hughes, Deputy Assistant Director of the Office of Civil and Defense Mobilization, in a talk before the National Association of Waste Materials convention in New York City. Mr. Hughes said that, contrary to some reports last year, U. S. Government stockpile authorities have no plans at the moment to dispose of any Government-owned copper from excess stocks accumulated under the Defense Production Act program.

Mr. Hughes did say, however, that U. S. agencies and interested departments are constantly studying this situation. The OCDM official also emphasized that before any action would be taken, the agency would seek the advice of the industries concerned as well as other Government departments.

## Value of Gov't Holdings

Three U. S. Government agencies have stockpiles of materials valued at \$16 billion, according to a report by the Joint Senate-House Committee on Non-essential Federal Expenditures.

The committee, which is headed by Sen. Harry F. Byrd (Dem., Va.), reported that as of December 31, the Agriculture Department had \$7,452,451,000 worth of farm surpluses and strategic materials, including diamonds valued at \$35,397,000.

The stockpile of strategic and critical materials held by the General Services Administration was valued at \$8,333,185,000; diamonds included in this inventory were worth \$91,823,000.

The Office of Civil and Defense Mobilization had amassed \$201,570,000 worth of supplies, mostly in the medical category.

## U. S. Barter Deals

The U. S. Department of Agriculture reported that barter contracts valued at \$35,200,000 were negotiated by the Commodity Credit Corporation in the October-December quarter (Continued on Page 12)



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# Lead and Zinc Outlook Is Favorable

By **SIMON D. STRAUSS**, Vice President, American Smelting & Refining Co., New York

**T**HE subject of our panel today, the metal potentials for the next decade, is not unlike that assigned by President Truman some nine or ten years ago to a distinguished group of United States citizens, who subsequently issued what has come to be known as the Paley report.

In that report the attempt was made to forecast the probable demand and supply in the year 1975 for many basic materials—including lead and zinc. The basic data were related to the actual demand and supply in the year 1950. Thus the time that has already elapsed represents 40 per cent of the total period studied by the Paley Commission. During these ten years the growth of industrial activity and of population in this country have, if anything, been at a faster rate than the Commission anticipated.

## **How Have Lead and Zinc Done?**

The Commission reported United States consumption of primary lead, excluding all secondary material, of 784,000 short tons in 1950. It was estimated that by 1975 this figure would rise to 1,200,000 tons—an increase of slightly over 50 per cent. Outside the United States the Commission reported consumption in all other countries, excluding the Sino-Soviet bloc, as 844,000 tons and it calculated that by 1975 this would rise to 1,500,000 tons, a gain of about 78 per cent. If one assumes a fairly uniform rate of increase during the 25-year period, these assumptions would mean that in 1960 the United States would consume 950,000 tons of primary lead and all other countries would consume 1,105,000 tons.

Are these figures likely to be realized this year? The best available data indicate that the United States will fall short but that the rest of the world will exceed the projections cited. My own estimate would be that in 1960 the United States will use between 825,000 and 850,000 tons of primary lead, while the other countries of the Free World may use about 1,250,000 tons. The combined

Address delivered March 14 before 47th annual convention of National Association of Waste Material Dealers, Inc., in New York.



**SIMON D. STRAUSS**

total of 2,075,000 to 2,100,000 tons compares with a combined Paley projection of 2,055,000 tons.

The Paley estimates for zinc assumed similar trends. Consumption of primary zinc in the United States in 1950, including zinc in pigment and other non-metallic forms, was placed at about 1,080,000 tons while the estimated 1975 use was 1,500,000 tons—a 39 per cent increase. Consumption in the other countries of the Free World, about 1,060,000 tons in 1950, was expected to rise to 1,705,000 tons by 1975, a gain of 61 per cent. Assuming a uniform rate of increase during the 25-year period, the United States would consume 1,248,000 tons this year and the rest of the Free World would consume 1,318,000 tons. My estimates of probable 1960 consumption of zinc are about 1,200,000 tons of zinc in the United States and close to 1,600,000 tons elsewhere. The combined total of 2,800,000 tons compared with a projection of 2,566,000 tons.

## **Box Score on Paley Views**

If these calculations are correct, one can draw up a box score on the Paley Commission projections for consumption of these two metals as follows:

1. Zinc has done better than lead.
2. Consumption outside the United States has shown a faster rate of growth than originally projected for both metals.

3. Consumption in the United States has shown a much slower rate of growth than originally projected for lead, while zinc has come close to the growth anticipated.

4. The total consumption of each metal, combining the United States with the rest of the Free World, is in 1960 likely to be somewhat greater than the Paley Commission had estimated.

It is this last point, I think, that will come as a surprise to some people. There has been so much furore over the depressed state of the domestic lead and zinc industries and so much clamor for governmental intervention to help domestic miners, that the impression is widespread that these industries have been passed by in the general growth of world industry and commerce.

It is, of course, true that prices of lead and zinc have been low in relation to the domestic costs of production and that, as a consequence, the industry in the United States is supplying a smaller share of the total market than it did ten years ago. This is neither the time nor the place for a further discussion of the pros and cons of what has become a highly controversial question—whether the government should provide quotas, tariffs, subsidies, or no help at all to the domestic miners. Therefore, I do not propose here to discuss the immediate economic problems of the industry—but in projecting the potential for the sixties I do think it important that the growth in total demand in the Free World during the fifties not be overlooked.

## **Projections for Decade**

The conclusions I have already noted with respect to the Paley report raise certain questions that should be answered in making our projections for the next decade. These questions are:

1. Why did zinc consumption grow more rapidly than lead consumption?
2. Why did consumption in the rest of the Free World grow more rapidly than in the United States?
3. If the combined consumption of each metal continues to exceed the

Paley projections, is the raw material available to supply this demand?

#### Analyses of Markets

Taking first the relatively better performances of zinc than of lead, an analysis of the industries gives a fairly clear answer. In the United States there are three large uses for lead and many small ones. The large ones are: Storage batteries, tetraethyl lead, and cable coverings.

The first two are tied in with the automobile industry, but demand for these purposes is affected more by the number of cars in use rather than by the number of new cars built each year. The number of cars in use is tending to rise, but it rises rather slowly. The longer life of car batteries and the greater efficiency developed in oil refining have both tended to mean there is less lead being used for each mile that vehicles are driven. These technological trends are slow in asserting themselves and as the population is rising rapidly it is likely that the total annual use of lead in the operation of automobiles will continue to rise.

#### Less Lead Used in Cables

The story with electrical cables is a different one, however. Today, at the end of the fifties, the volume of lead used by cable makers is roughly half what it was at the beginning of the decade, due to substitution of other sheathing materials — plastics and aluminum. Had lead retained its market in the cable industry, the Paley projection of U. S. lead requirements would have been more nearly fulfilled. Good work has been done recently in an effort to improve lead's competitive position in cables, but a recapture of most of the ground lost seems improbable.

In projecting demand for lead in the sixties, it is well to recognize that current statistics already take into account the loss of much of the cable market. There does not appear to be any threat during the sixties of the loss of another lead outlet, comparable in size to cables. In several fields, at present minor, there are good prospects of gain. Just to enumerate them they include nuclear shielding, sound and vibration control, ceramics, plastic stabilizers, and glass. Therefore, while U. S. lead consumption rose only moderately in the last decade it should do better in the decade ahead.

#### Zinc Position Improved

Zinc did not develop any major new uses during the fifties, but its technical position in its two largest outlets was, if anything, improved. The steel industry made notable advances in the technique of continuous galvanizing of sheet steel, producing a uniform product with improved characteristics

over the old individually dipped sheet. The result has been that galvanized steel has strengthened its hold on old uses and has developed new ones. Available facilities have been operating at capacity. There will be six new continuous galvanizing lines added during 1960 to the thirty-three in operation by the steel industry at the beginning of the year and others will begin operation in 1961.

The other large user of zinc is the die-casting trade. In the past the plating of zinc die-castings has presented some difficulties where the application has involved outdoor use. Work done on plating techniques in the last three years appears to have overcome the corrosion aspects of this problem. Increased use of zinc die-castings should ensue. Because competitive materials are readily available, however, price will be an important determinant of the amount of zinc used for die-castings.

Given the expectation of continued economic expansion, zinc appears to be well placed to compete with other basic raw materials during the sixties.

The second question listed before was why consumption of both lead and zinc increased more rapidly in the rest of the Free World during the fifties than it did in the United States. In this respect, of course, lead and zinc are no different than most raw materials. The phenomenal expansion of industry in Western Europe and Japan during the fifties went well beyond the fondest expectations held when the decade began. Standards of living rose rapidly and with them the demand for consumer durable goods, in the production of which lead and zinc play an important part. Today, for instance, production of motor vehicles in Western Europe is in the aggregate more than half that of the United States—whereas in the late forties it was one fifth or less of that in the United States.

#### Effect of International Trade

The changed position of the United States in international trade had its effect on consumption of metals in this country. For instance, in 1959 this country imported about 700,000 cars and exported only 116,000. In 1950, by contrast, this country imported only 21,000 cars and exported 153,000. Thus, in the ten-year period we changed from a net exporter of 132,000 cars to a net importer of 584,000, a swing of 716,000. As each car made in this country uses 60-70 pounds of zinc and carries a battery with a lead content of more than 20 pounds (plus other lead in solder,

brass alloys, etc.) it is quite obvious that domestic consumption of lead and zinc dropped and foreign consumption of the two metals rose as a consequence of the changed pattern in the automobile trade. A similar pattern applies to other consumer durable goods.

The relatively poor showing of lead consumption in this country, as I have said, is in large measure due to loss of markets in cable sheathing. This trend, although evident outside the United States as well, has been much less pronounced. In many foreign countries, public utilities, the largest consumers of sheathed cable, tend to be more conservative in departing from previous practice than is the case in the United States. However, a realistic appraisal would probably be that the trend experienced here is likely to be repeated abroad over a period of years.

Looking ahead to the sixties, one may wonder whether the same rapid expansion can be continued in Europe as occurred in the fifties. Much hope is held out for economic growth resulting from such moves as the creation of the Common Market. But as economies mature it becomes progressively more difficult to maintain a high percentage increase—as we have learned in our own country, which has the highest standard of living in the world but is expanding its production at a more deliberate pace than that prevailing in less developed areas.

There is much more to the world than Western Europe and the United States. If the per capita consumption of lead and zinc in the countries of Latin America, Asia, and Africa were to rise to even one-fifth of what it is in this country a very large market would be created for both metals. What are the chances?

In the world today the peoples of the underdeveloped countries appear determined to achieve the high standards of living that prevail in the industrialized areas. The problems that have to be overcome are enormous—not least of them the necessity for stable, honest government, for only in conditions of such stability can economic activity expand.

Prediction of the outcome of the hopes and aspirations of the underdeveloped peoples lies well outside my field of competence. We can hope for much progress, but in forecasting the economic trends of metal consumption it would be well to be conservative in our expectations.

Nevertheless, there are important plus factors for both lead and zinc



among the underdeveloped countries. The capital required to manufacture automobile batteries, for instance, is not large compared to many industries and it is only reasonable to suppose that a battery-manufacturing industry will be one of the first to be developed in the newer economies. If there is local use of motor vehicles—including not only cars, trucks, and buses, but also tractors and motor boats—then there is a local market for batteries. In the same way, the capital required to make lead sheet or pipe is not large and almost any kind of metal-working industry will create a local demand for solder, babbitt, and bearing metals.

In the case of zinc it appears to be a sine qua non of the emerging nationalism in the world that local steel production be established in each country. The most durable and economic protection for steel in its building applications is obtained by imposing a zinc coating; galvanized steel is the poor man's surest road to a rugged and durable edifice. As an example, in two of the underdeveloped countries that are making greatest strides toward industrialization—India and Mexico—the rate of growth in consumption of zinc compares favorably with the increases in other metals.

#### Consumption to Increase

Thus, even though industrialization of the underdeveloped countries during the sixties falls somewhat short of the hopeful goals that have been set, it appears reasonable to expect large gains in the consumption of both lead and zinc. On the other hand, in Western Europe one would anticipate the rate of increase to be only slightly greater than, say, in the United States.

To revert to the Paley projections—these called for an annual lead consumption by 1975 of 1,200,000 tons in the United States and 1,500,000 tons elsewhere—a total of 2,700,000 tons. By 1970, the end of the decade for which we are making projections, these figures apparently should be 1,120,000 tons for the United States and 1,370,000 tons elsewhere—a total of 2,490,000 tons. A reasonable guess now would be that the total is likely to be realized but that it will be achieved by a consumption of perhaps 950,000 tons of primary lead in the United States and 1,550,000 tons elsewhere. Compared with our estimates for 1960, these forecasts would mean that during the coming decade the total gain would be 15% in the United States and 20% else-

where—or average increases of 1.5% and 2.4% annually.

#### Paley Projections

In the case of zinc, the Paley projections were for 1975 consumption of 1,450,000 tons in the United States and 1,700,000 tons elsewhere—a total of 3,200,000 tons. By 1970, the end of our current decade, these figures apparently should be 1,365,000 for the United States and 1,570,000 tons elsewhere—a total of 2,935,000 tons. Actually, my forecast for 1960 is that the use of zinc outside the United States is already at the level projected by the Paley report for 1970. Based on the 1960 probable figures, and assuming a total ten-year growth of 15% in the United States and 25% elsewhere, I would forecast the 1970 use of zinc as 1,380,000 tons in this country and 2,000,000 tons elsewhere—a total of 3,380,000 tons or more than the Paley figures for 1975.

To summarize, it is my belief that even though the use of lead in this country has not kept pace with the expectations held in 1950, this shortfall has been offset by greater gains in its consumption elsewhere; the total use of the metal by 1970 should be in line with the Paley projections. As for zinc, consumption in the United States appears to be growing at about the rate anticipated but elsewhere zinc has been doing better than expected. Consequently, total demand is likely to be measurably greater than foreseen in the Paley report.

#### Raw Material Availability

This brings us to the third question, is the raw material available to supply this demand?

When the Paley report was prepared there was great concern on this point. All through the report there appeared to be grave doubts that sufficient ore would be found—particularly with respect to the availability of lead. In the ten years since the report was written, much has happened to dispel these doubts. Large new deposits that can be mined at prevailing prices have been developed—many of them not yet in production. This is true not only in Latin America, Canada and Australia, but also here in our own country. In 1950 Tennessee ranked eighth among the zinc-producing states of this country and yielded only 35,300 tons. Today, Tennessee, one of the first states to be developed as a source of zinc, is the largest miner of zinc and thanks to its very large new resources its rate of production is about triple that of 1950. In Mis-

souri large additional lead resources have been opened up and an active exploration campaign is under way in which most of the major non-ferrous producing companies are engaged.

#### Mineral Resources

Mineral resources are exhaustible and some day, undoubtedly, the world will be short of lead and zinc—as of other metals. During the decade with which we are today concerned this not likely to be the case. Production should be adequate to meet demand on the scale envisaged in these forecasts. Furthermore, if political intervention in the markets can be kept at a minimum, the outlook for prices is reasonably favorable. The periodic gluts of lead and zinc that occurred during the fifties, with unfortunate consequences for price, were in part the penalty the industry paid for the U. S. stockpiling program. The non-recurring demand which that program created was intermittently withdrawn from the market place and now appears to have ended. On each occasion that this crutch was withdrawn, the industry fell on its face. Let us hope that during the sixties we will stand on our own feet without artificial props.

### \$50,000,000 Zinc Project Scheduled for Quebec

A new \$50,000,000 zinc mining project in the Lake Mattagami area of Northwestern Quebec was announced by the Premier, A. Barrette.

The project is to be carried out by Mattagami Mines, financed by the important Noranda Mines, McIntyre Porcupine Mines, and Canadian Exploration.

Mr. Barrette said that in order to carry out the project the Government will build, this summer, a \$4,000,000 road starting from a point 35 miles north of Amos and extending 110 miles to the mine site. The company will participate financially on the construction of the road.

The plant contemplated by the company will handle 2,000 tons daily, taking ore from property discovered in 1957 and having a 25,000,000 ton deposit of zinc, copper, silver, and gold.

Zinc would account for roughly 25 per cent of the deposit, said Mr. Barrette. Underground work and construction of the ore concentrating plant are expected to cost \$25,000,000 and the refining plant \$30,000,000.



# Aluminum in the 1960's

By LEWIS P. FAVORITE, Vice President, Aluminum Company of America, Pittsburgh

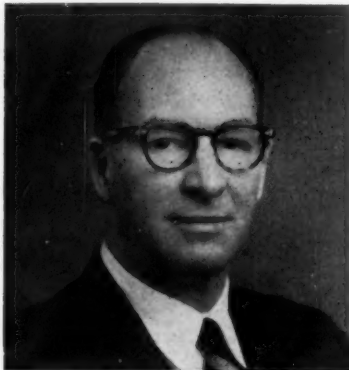
**F**OR more than 70 years now, this upstart modern metal called aluminum has been busy writing new records for industrial growth. Beginning in 1888 with a total U.S. production of a mere 50 pounds a day (which incidentally, was just about 100 per cent more than existing demand), aluminum production in this country has expanded to well over 10 million pounds per day.

The long-term trend line of aluminum consumption since the turn of the century shows that the industry has been doubling in size on an average of every ten years. Per capita consumption in this country last year was about 27 pounds per person, nine times what it was in 1939. Both output and shipments in the same twenty-year period shot up close to 1100 per cent while industrial production as a whole was gaining only about 174 per cent.

The year 1959, as I'm sure you all know, was the industry's best year to date in terms of physical volume. Primary production was 1,953,000 tons, up 16 per cent over the previous record set in 1956; shipments approached 2.5 million tons, up 20 per cent over the same year. And the outlook for 1960 is even better. We look for a ten per cent increase over last year's aluminum shipments to customers.

This tremendous expansion of the primary aluminum industry has generated an ever-increasing amount of secondary metal, so I doubt if any of you gentlemen are particularly unhappy about that. That same expansion, however, raises an interesting question. As we look forward to the 1960's, some of you may be wondering how long that growth rate can be sustained. Will aluminum continue to go through one round of expansion after another? Or is it perhaps time to wonder if the major expansion phase is over?

At this point, I'd like to emphasize that the answer to that question can't be any more important to you than it is to us at Alcoa. Despite the ribbing those of us in the primary industry often get for being "eter-



LEWIS P. FAVORITE

nally optimistic," I can assure you that we are about the most realistic bunch of optimists you'll find anywhere. You can draw your own conclusions as to how we got that way.

As for the outlook for aluminum, I'll get myself right out on a limb and say that, as far as Alcoa is concerned, we think the decade ahead will definitely be a period of great progress. We are fully prepared for some ups and downs, but the long-term trend is a straight-line projection pointing to steady growth.

Just how far up and how fast this growth will be, I prefer to leave to others with different talents and more adventuresome natures. What I would like to do is go over with you some of the reasons for our continued confidence in aluminum's potential. Perhaps you can then make your own predictions—at your own risk, so to speak.

## Where We Are Now

My general view is that the future of any activity is rooted in both the past and the present, and I think this applies particularly to the aluminum industry. So let's look for a moment at some of the factors that have contributed to the metal's current position.

In reviewing aluminum's past development, four basic characteristics of the industry stand out. The first might be called innovation—the emphasis on research and development. Almost from its inception, aluminum's progress has been sparked by a

bewildering string of advances; new alloys; new forming techniques; new methods of joining; an array of protective and decorative finishes that only aluminum can offer; revolutionary designs; and fresh applications that add beauty and convenience to everyday living.

The aluminum industry has also been marked by aggressiveness in marketing, sales and promotional activities. It has again and again created whole markets where none existed. It has been tireless in its efforts to make the advantages of the metal familiar to the public.

Economic factors in the industry have played an important part, too. Sources of raw materials are abundant; and steady, adequate supplies are assured because the principal U. S. producers own or control their reserves. We have had generally harmonious labor relations. Important, too, is the fact that the metal is still a bargain. Your dollar today buys a bigger chunk of aluminum than of any other nonferrous metal.

Finally, of course, there are the inherent advantages of the metal itself in alloy form—it is light, strong and highly resistant to corrosion; it can be joined and fabricated in more ways than any other metal; it is non-magnetic; it has a unique adaptability to many forms, textures and attractive finishes. And the list goes on. It is truly a metal of amazing versatility.

These, then, are the dominant factors that have made aluminum today the number one nonferrous metal, with its eye on breaking the 2-million-ton production mark in 1960. And these same factors, I believe, will prove to be the key to the future of the industry.

The fact is that aluminum was so successful throughout much of the last decade in stimulating demand that we didn't have enough capacity to go around. I need hardly mention to this group that we no longer have that problem.

## Adequate Reserve Capacity Needed

The days of not enough U. S. primary aluminum capacity to meet demand are over—and, gentlemen, we

Address delivered March 14 before 47th annual convention of National Association of Waste Material Dealers, Inc., in New York.

want it to stay that way. Adequate reserve capacity is an essential condition for growth, especially in a period of rising demand.

Although too much idle capacity is expensive and undesirable, there is no doubt in the industry today that even more capacity is going to be needed, and possibly sooner than anyone realizes. In most of our large markets today, a single major application—automobile engines or cans, for example—could change the present situation in a hurry. But the aluminum industry will be prepared to meet such increased demand.

The important point here is this: Most of the significant new product applications going on at the moment are largely a result of an assured supply of metal which has given designers increased freedom to choose aluminum.

#### **The Automotive Field**

The automotive field is a good example. It takes about three years to get a new car design from the drawing-board stage to the assembly line. Obviously, then, not much aluminum gets designed into a new car unless management in the auto industry knows the metal will be available when that model hits the assembly line. The same applies to the introduction of manufactured aluminum residential housing. To encourage other mass markets of the future, we must be in a position to supply the metal needed. We must expand ahead of demand—not after it is knocking at the door.

More and more producers of large tonnage items are now confident that the aluminum industry has—and will continue to have—adequate facilities to meet tomorrow's demands. I think the future will prove this to be one of the more important aspects of aluminum progress during the last few years.

Two other aspects of the recent past should also be noted in attempting to evaluate the future. One is that the aluminum market place has not yet begun to reflect the large expenditures for research and development in the last few years. In the case of Alcoa, for example, research and development outlays in 1959 were more than double what they were in 1950. In the years just ahead, this investment will show up in a stream of new processes, products and applications.

#### **More Emphasis on Designing**

The other point is that we are beginning to see a new concept in aluminum design. Where the metal is used in place of another material, it has too often been bound by the traditional form of the material it re-

places. Today, there is more emphasis on designing with aluminum to make the best use of its specific qualities and advantages.

This is important in two ways. In buildings, for example, once aluminum is relatively free of the conventional forms of steel, wood and masonry, the structures we live and work in can become more pleasing to the eye and far easier to take care of. This, in turn, should work to increase the public's acceptance of the metal. At the same time, because of this design trend, aluminum will be used more in conjunction with other materials, instead of trying to compete head on, thus generating new markets for both. Our Alply building panel illustrates this approach. Alply is a sandwich-type wall panel made of two sheets of aluminum bonded to a core of foam plastic to form an unusually attractive, strong, insulated wall unit that also provides effective protection against fire and moisture.

As you can see, during the past decade the aluminum industry has been doing more than scrambling to keep up with a steep growth curve. It has also been building a solid foundation for the future. Now, if you relate this situation to the widespread prognostications for the 1960's—rapid technological advances, expanding population, more disposable income, more leisure time and large portions of the world demanding a higher standard of living—I think you get the general picture. In Space Age terminology, we in the industry feel that our lunching pad for the future is operational. All we need is the right kind of atmospheric conditions—reasonable economic progress and stability—to keep our aluminum rockets climbing.

#### **Promise of the 1960's**

All the factors I've outlined—research, market development, industry stability and the metal's inherent qualities—will play vital roles in the growth of aluminum in the 1960's. And of these, certainly the advantages of the metal itself will be of prime importance. Tomorrow's consumers are going to put special emphasis on three things in manufactured goods:

1. **Light weight**—from all indications, the years ahead will stress mobility, portability and speed. For this reason alone, aluminum will be a natural choice. Its slogan might be: "A light metal for a fast-moving age."

2. **Freedom from maintenance**—aluminum is the metal that virtually takes care of itself, thus assuring

more time for leisure activities, and a minimum of trouble and expense for upkeep. Imagine houses, for instance, with windows, walls, roofs and rain-carrying equipment that do not stain or require periodic painting.

3. **Color and design flexibility**—today, the accent is already on eye-catching colors, textures and forms. Aluminum, because it can be finished, colored and shaped so easily and in so many different ways, will continue to be a leader in this trend as it has in the past.

With regard to specific market areas, here are a few notes on where we think increasing quantities of tomorrow's aluminum will go.

**Building products.** This is currently the number one aluminum market and still has excellent growth potential. It consumed almost 700,000 tons in 1959 and could easily exceed 1,000,000 tons during the Sixties, sparked by urban redevelopment projects. Today's average new house uses more than 150 pounds of aluminum, but tomorrow's residential home could easily absorb 2,000 pounds—in fact, the Viking models currently produced by National Homes Corporation use from 1,500 to 3,000 pounds of aluminum. A reasonable estimate for 1965 would be 350 to 400 pounds per average new house. Large-scale use of aluminum in multi-story buildings should continue strong. Relatively new areas that have good potential include civic auditoriums and sports arenas, especially those with retractable domes; and existing buildings renovated with specially designed aluminum products, such as Alcoa's Sol Dec. building panels and new residential siding.

Aluminum products for modern highways—bridges, railings, light standards and signs—are a growing part of the building products field. Highway guard rails alone represent a potential 30-million-pound market for Alclad 2024, an alloy important in the aircraft industry. Incidentally, it's amazing how many motorists insist on turning guard rails into scrap each year.

The field of transportation—which covers both civilian and military applications, and includes air, water and space vehicles—is currently our second largest market. Indications are that rapid growth will take place in this area, with consumption by 1970 possibly double the more than 500,000 tons of aluminum used last year.

#### **Aluminum in Compact Car Engines**

Latest reports indicate that four of the 1961 U.S. compact cars will

feature engines made largely of aluminum, and we expect this to be true of many American cars by 1965. If so, the average use of aluminum per car could easily reach 130 pounds, 2½ times more than last years average. In a 7.5 million-car-year, that would mean a market for nearly a half-million tons of metal. Aluminum bumpers and radiators are also on the Detroit list of coming attractions. Leading the way in this last respect is the aluminum radiator on Chevrolets 1960 Corvette sports car.

#### Other Growing Applications

Transportation includes many other growing applications, such as jet aircraft, ocean-going vessels, small pleasure boats, highway trailers, cargo containers and railroad freight cars. Cost-conscious railroads, for example, now use three times as much low-maintenance aluminum as they did ten years ago, and 1959 was a year of significant breakthroughs in this field.

Aluminum will remain vital to our future national defense and space programs. Most of our present missiles are built around weight-saving airframes and outer skins of the light metal. Those that use solid-fuels also require large quantities of aluminum in powder form—often as much or more than in the structural members themselves. Continued research is expected to turn up new metallurgical techniques to further broaden aluminum's contribution in this important area.

#### Electrical Field

Growth prospects are also bright for our number three market, the electrical field. The major advantage of aluminum here is its combination of light weight with the ability to conduct about twice as much electricity per pound as copper does. Based on the electrical industry's prediction that both electric power production and consumption will double in the next ten years, we look for aluminum shipments to this market in the same period to more than double last years 250,000 tons. In addition to transmission cables and accessories, increases should be substantial in electrical bus bar, conduit, electronic components, and strip windings for coils and transformers.

This last application, strip windings, has expanded rapidly since it was initiated in 1957. The increasing emphasis on a multitude of control systems and automation devices in-

dicates that by 1965 these windings will represent a realistic market for more than 1,000 thousand tons of aluminum.

Last year, Alcoa helped introduce a new structural use of aluminum—transmission towers to carry extra high voltage (EVH) power lines cross-country. An estimate of this market potential would be sheer guess work at this time, but it is considerable.

Finally, there is the packaging market—and this one is definitely headed for outstanding gains. I imagine most of you are well aware of the increasing use of aluminum for flexible foil packaging, (including household wrap), rigid containers for products such as frozen or heat-and-serve foods, and closures of many kinds. Last year, an estimated 130,000 tons of aluminum went into packaging, with foil use alone accounting for 110,000 tons. And, gentlemen, that's a lot of foil.

The hottest item here, though, is the aluminum can. Already motor oil, beer and several aerosol products are being sold in aluminum cans, and despite a fierce competitive battle with traditional tin plate, this market holds great promise. Large-scale adoption—and we expect a significant breakthrough in the food industry in 1960—would require tremendous quantities of aluminum.

These four markets I have outlined here are the ones expected to be the aluminum growth leaders in the 1960's. There are others, of course, where the metal should also be in substantially greater demand in the coming years.

In short, gentlemen, we at Alcoa are talking, thinking and planning growth. We see nothing wrong with optimism as long as it has a realistic base. Occasionally, we are reminded of the universal law that says the phenomenon of growth is a curve starting out slow, then rising steeply, but somewhere, sometime leveling off. I can only say that the aluminum industry is not trying to rewrite that law. We just don't think that this uniquely modern metal has even begun to hit the upper, or level, part of the curve yet—or will in the foreseeable future.

There will be some uneven spots, to be sure. Businessmen still haven't found the "Q" factor for the inventory equation. Many political and economical problems need effective solutions. And we are prepared for the fact that we have a tough, highly competitive job ahead of us in the

next ten years. But, then, that's not a new situation.

Taking the broad view, gentlemen, we feel confident that the long-term trend line of the aluminum growth curve will continue to look more like a straight line . . . pointing up.

### Washington Report

(Continued from Page 4)  
of 1959 as compared with \$34,400,000 negotiated in the preceding quarter and \$26,800,000 negotiated in the October-December quarter the preceding year.

Barter contracts provide for the exchange of CCC-owned agricultural commodities for strategic materials, on an equivalent-value basis.

Materials delivered to CCC by contractors in the October-December period had a value of \$52,400,000, as compared with \$50,200,000 in the preceding quarter and \$49,400,000 in the October-December period the previous year. As of Dec. 31, 1959, strategic materials acquired through barter and held in CCC inventory pending transfer to the stockpiles were valued at \$103,400,000.

The following table shows the status of raw materials inventories in the supplemental stockpile as of Dec. 31, 1959:

Material	Unit	Inventory on Hand
Aluminum oxide, fused, crude	SDT	100,862
Antimony metal	ST	6,861
Asbestos, chrysotile	SDT	4,521
Bauxite, metal grade,		
Jamaica type	LDT	1,701,667
Beryl	ST	6,599
Bismuth	LB	1,146,323
Cadmium	LB	6,107,756
Chromite, chemical grade	SDT	14,461
Chromite, metallurgical grade	SDT	963,261
Cobalt	LB	1,077,018
Colemanite	LDT	33,200
Columbite	LB	42,219
Copper	ST	8,705
Diamonds, industrial stones	KT	7,009,957
Fluorspar, acid grade	SDT	402,134
Graphite, natural—Ceylon		
Amorphous Lump	SDT	1,428
Iodine	LB	241,953
Lead	ST	176,383
Manganese, battery grade, natural ore	SDT	30,894
Manganese ore, chemical grade, type B	SDT	17,043
Manganese ore, metallurgical grade		
Crucible	SDT	1,037,143
Mica, muscovite block, stained and better	LB	197,230
Mica, muscovite film	LB	16,159
Mica, muscovite spittings	LB	4,429,200
Platinum group metals,		
palladium	TR. OZ	462,708
Quartz crystals	LB	82,272
Rare earths	SDT	2,256
Selenium	LB	59,785
Silicon carbide, crude	ST	37,902
Tin	LT	3,933
Titanium	ST	4,646
Tungsten	LB	4,484,600
Zinc	ST	294,300

NOTE: This table is based on information provided by the General Services Administration, custodian of the supplemental stockpile inventories. It shows quantities of materials transferred to and in these inventories as of Dec. 31, 1959. These materials have been obtained in large part through barter program but not exclusively.



# TENSION IN BRITISH COPPER MARKET EASED BY END OF LONG, DRAWN-OUT MINING STRIKES IN AMERICA

Some Puzzlement in London Concerning General U.S. Economic Picture;  
Tin and Zinc Show Easier Tendencies; Better Tone Displayed in Lead

March 8, 1960

IT WAS only to be expected that the ending of the big long drawn out American strikes should ease the tension in the copper market here to some extent and over the past month prices have lost ground though, in the case of forward metal, the drop has been no much more than half that noted in the case of cash.

In point of fact, the stringency in spot supplies here remains fairly acute, not only as far as copper on warrant on the Metal Exchange is concerned, but also in consumable grades. Indeed, it is this fact which has prevented the recession in prices proceeding more rapidly as everybody is now expecting the supply position gradually to move to one of the surplus, in which case it is realized that the recent level of prices can hardly be maintained.

This view has been accentuated to some extent by the fact that consumer demand in the United States

By L. H. TARRING  
London, England

since the end of the strike has been appreciably less than had been anticipated here. It had been thought that after such a long and major interruption in supplies fabricators would have been very anxious to rebuild their depleted stocks and that this might result in a very high level of orders for two or three months at least. Indeed, there is a good deal of puzzlement here as to the general economic picture in the United States.

Movements on Wall Street are always watched with fairly close attention as a barometer of the industrial trend but economic news has seemed to be more favorable than the stock market movements have suggested. The sharp fall in scrap prices in the United States has not been calculated to stiffen sentiment on this side of the Atlantic as the current level seems to suggest that the maintenance of even the primary producers' 33 cents figure is in some doubt.

However, generally speaking consumer demand in Europe is running at a good level, although the wire and cable trade in this country probably still has some spare capacity which it would be glad to utilize. Apart from Europe, Russia has shown interest and Japan has also been in the market for additional tonnages fairly urgently as consumption there seems to be running at a high rate. Japan's own output has reached record levels but is insufficient for domestic needs.

U. K. consumption last year was well down compared with 1958 at 633,166 tons against 667,852 tons. However, bearing in mind that copper wire alone dropped 65,000 tons it is obvious that the trend in other products was a favorable one and most branches of the fabricating industry here are at present running at a very satisfactory level.

The International Wrought Non-Ferrous Metals Council is holding

its March meeting in Salisbury, Rhodesia at the invitation of the copper producers. So far as is known, however, the question of an alternative method of pricing is not likely to be on the official agenda on this occasion. After the meeting the fabricators are to tour the Northern Rhodesian Copperbelt and also visit the mines and plants in the Belgian Congo. These steps to bring about closer collaboration between primary producers and fabricators must surely in the long run be for the good of the industry as a whole.

As was expected, Mount Isa Mines, Ltd. has now registered its brand of electrolytic wirebars "ISA" on the London Metal Exchange and the indications are that Australia will now become a copper exporter again for the first time for many years.

## Easier Tendency for Tin

During the past month cash tin on the London market has lost practically £10 a ton but the backwardation has disappeared. This easier tendency is ascribable partly to some slowing down in the rate of American consumer demand the last two or three weeks and partly to the larger

## U. K. TIN STATISTICS

Tin consumption during December showed a slight gain at 1,977 tons over the November figure of 1,861 tons according to the British Bureau of Non-Ferrous Metal Statistics. Production also showed a gain at 2,858 tons (plus 41 tons secondary) compared with 2,513 tons (30 tons) a month earlier. Stocks were up at the end of the month at 11,528 tons (10,545 tons). Details of consumption of primary tin are given below:

	—12 months ending—		
	Dec. 1959	Dec. 31 1958	Dec. 31 1959
Tinplate .....	1,048	9,984	10,145
Tinning:			
Copper wire .....	47	514	535
Steel wire .....	10	97	105
Other .....	66	743	785
Total .....	123	1,354	1,425
Solder .....	158	1,907	2,220
Alloys:			
Whitemetal .....	235	2,857	2,954
Bronze and gunmetal ..	183	2,219	2,197
Other .....	39	415	447
Total .....	457	5,497	5,598
Wrought tin*			
Foil & sheets .....	27	241	278
Collapsible tubes .....	29	289	298
Pipes, wire & capsules ..	2	38	35
Total .....	58	568	611
Chemicals† .....	133	992	8
Other uses‡ .....		117	1,466
Total all trades ....	1,977	20,413	21,375

\* Includes Compo and "B" metal.

† Mainly tin oxide.

‡ Mainly powder.

## U. K. COPPER STATISTICS

Production of refined copper during December fell to 7,800 tons of primary (8,996 tons) and 9,134 tons of secondary (9,205 tons) according to the British Bureau of Non-Ferrous Metal Statistics. Stocks of refined copper showed a further decline at 43,956 tons (50,312 tons) but blister showed a gain of 425 tons at 11,049 tons compared with 10,624 tons the previous month. Of the refined stocks consumers held 2,514 tons compared with 28,620 tons in November. There was a decline in consumption at 59,246 tons compared with 61,155 tons a month earlier. Details are given below.

	—12 months ending—		
	Dec. 1959	Dec. 31 1958	Dec. 31 1959
Unalloyed Copper Products			
Wire* .....	22,438	296,455	231,062
Rods, bars & sections ..	2,267	21,153	19,626
Sheet, strip & plate ....	5,141	55,850	57,526
Tubes .....	5,548	61,719	66,281
Castings & miscellaneous ..	650	7,800	7,800
Alloyed Copper Products			
Wire .....	1,658	15,601	18,234
Rods, bars & sections ..	13,049	118,633	140,040
Sheet, strip & plate ....	10,002	88,561	103,771
Tubes .....	1,822	22,869	21,900
Castings & miscellaneous ..	7,021	72,926	74,974
Copper sulphate .....	1,987	28,049	31,508
Total all products ....	71,583	790,706	772,722

Copper content of output .....	59,246	667,852	633,166
Consumption of refined copper .....	44,753	634,619	478,819
Consumption of copper & alloy scrap† (copper content) .....	14,493	133,233	154,347

\* Consumption of H. C. copper and cadmium copper wire rods for wire and production of wire rods for export.

† Virgin and secondary refined copper.

‡ Consumption of copper in scrap is obtained by the difference between copper content of output and consumption of refined copper, and should be considered over a period since monthly figures of scrap consumption are affected by variations in the amount of work in progress.

# AVERAGE BRITISH PRICES FOR COPPER, TIN, LEAD, ZINC

(Per Long Ton)

Mean of Bid and Asked Cash Quotation at Close of Morning Session on London Metal Exchange

	COPPER			TIN			LEAD			ZINC		
	Cash	3 Months	Settlement	Cash	3 Months	Settlement	Current Month	3rd Following	Current Month	3rd Following	Current Month	3rd Following
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1954 Averages	248 17 11	239 17 7	249 0 11	719 8 11	709 17 7	720 6 7	98 8 12	94 7 4	78 5 4	77 16 11		
1955 Averages	351 14 11	341 0 3	352 5 6	740 2 12	730 12 11	740 12 8	105 17 3	105 9 6	90 13 4	89 12 3		
1956 Averages	328 14 5	324 13 1	329 1 8	787 14 9	774 7 7	788 13 3	116 6 5	114 8 9	97 14 3	95 3 7		
1957 Averages	219 8 10	221 0 3	219 12 10	754 15 4	747 10 10	755 3 11	96 12 9	96 13 2	81 11 7	80 1 1		
1958 Averages	197 13 3	197 9 3	197 16 11	734 18 6	734 17 11	735 6 1	72 15 8	73 6 10	65 17 12	65 10 12		
1959												
January	230 2 0	227 5 10	230 5 0	758 15 6	759 4 9	759 2 10	71 17 0	72 3 3	74 17 8	72 18 8		
February	236 4 2	235 10 8	236 7 6	772 9 9	773 9 0	772 15 0	69 19 4	70 16 8	73 13 8	71 19 8		
March	248 10 3	247 12 2	248 13 6	779 14 9	783 5 9	780 1 6	69 10 3	71 4 2	75 2 5	73 18 8		
April	240 0 5	240 6 6	240 8 5	782 5 3	783 15 5	782 11 4	69 1 0	70 8 4	72 13 9	72 9 2		
May	236 4 2	236 11 6	236 6 9	784 4 3	784 10 9	784 10 0	70 16 0	71 13 10	77 7 1	75 17 6		
June	230 0 11	230 0 4	230 3 8	788 7 9	789 8 10	788 14 1	69 13 4	71 5 8	78 8 2	77 6 11		
July	220 17 6	221 14 9	221 0 3	792 6 6	790 16 4	792 13 6	70 5 0	71 1 2	80 10 7	79 13 4		
August	232 16 9	231 9 3	233 0 0	792 18 6	791 18 3	793 4 6	72 3 3	73 3 1	85 5 11	83 19 5		
September	230 7 6	230 8 8	230 10 3	792 15 0	792 6 4	793 0 5	70 14 5	72 1 10	86 1 5	84 19 10		
October	241 18 5	236 17 5	242 2 11	794 2 9	794 8 2	794 8 2	70 12 5	71 12 2	91 7 4	89 9 2		
November	250 11 8	241 7 7	250 18 1	795 7 5	795 14 6	795 13 4	72 2 11	72 7 10	94 18 8	90 3 7		
December	255 8 10	239 15 1	255 14 7	789 3 2	785 6 8	789 11 4	72 13 11	72 9 0	95 3 10	90 3 3		
1959 Averages	237 13 1	234 15 7	237 16 8	785 7 10	785 10 0	785 14 2	70 15 7	71 13 9	82 4 8	80 5 4		
1960												
January	259 5 3	246 8 9	259 12 0	791 7 6	787 11 0	791 14 0	74 15 8	74 10 6	94 11 5	91 14 11		
February	263 17 5	245 17 0	264 5 0	792 7 5	790 3 10	792 15 3	73 17 3	73 15 6	88 17 2	88 18 5		

supplies of metal now becoming available as a result of the increased export quotas for the first quarter of the year.

At the time of writing, the International Tin Council is meeting in London to decide on quotas for the second quarter of the year and it may well have a very difficult decision to make. One of the problems, of course, is that it takes a long time for the full effects of increased quotas to be felt in the consuming countries and it may well be that the larger January/March rate has not yet been fully reflected. Obviously the Buffer Stock Manager has funds at his disposal to support the market if he so desires but the general view here is that there will be a disinclination to build up the stock to higher levels in the concluding stages of the existing Agreement and particularly prior to the United Nations meeting in May, when the future of tin control for another five years will be decided.

(Editor's Note: The International Tin Council, at its meetings in London

on March 8 and 9, increased the exportable quota for the quarter ending June 30, 1960, by 1,500 tons. The six producing countries will be permitted to export 37,500 tons during the second quarter of the current year. For the first quarter the permissible exports were 36,000 tons.)

## Lead Tone Better

With the knowledge that supplies to the world market are to be curtailed, at any rate for some months to come, and with consumption in Europe generally running at a pretty good level, the lead market has had a rather better tone during the past month. On the Metal Exchange prompt supplies are none too plentiful and, reflecting this position, prices have moved to an appreciable backwardation.

If consumption continues at its recent rate outside America it is anticipated that the supply position may get gradually rather tighter than it is at the moment and there is a distinct possibility that prices may move up a little further.

It is believed that in agreeing to continue the curtailment of supplies to the open market, producers are hopeful that values might be raised to somewhere in the region of £80 a ton and such a possibility certainly cannot be ruled out. On the other hand, it seems doubtful whether demand will broaden sufficiently between now and September to enable full supplies to be restored, bearing in mind that some appreciable stocks are being built up in producing countries.

U.K. consumption last year showed a useful gain of nearly 10,000 tons, compared with 1958, despite a drop of nearly 4,000 tons in the amount consumed by the cable industry. Cable makers are rather busier than they were a year ago but are still some way below their peak. In most other directions consumption contin-

ues to make quite a good showing.

## Easier Zinc Tone

Generally speaking, the zinc market here had a somewhat easier tone during February, to which several factors contributed.

In the first place, the knowledge that zinc supplies are now unrestricted encouraged consumers to believe that, despite the very buoyant level of consumption, generally speaking, there would be quite sufficient metal available to meet their requirements; secondly, the expectation of releases from the British Government stockpile strengthened this view; thirdly imports of Russian zinc into the U.K. in the last few months have been at a pretty high rate, amounting to over 2,000 tons a month.

However, the sales of American zinc on the London market seem to have tailed off, at any rate for the time being, and on the London Metal

(Continued on Page 16)

## U. K. ZINC STATISTICS

According to the British Bureau of Non-Ferrous Metal Statistics zinc stocks at the end of December showed a gain at 37,162 tons over the November figure of 35,460 tons. Of this total consumers held 19,372 tons. Production showed a further gain of 7,024 against 5,608 tons a month earlier. Consumption details are given below:

	—12 months ending—		
	Dec. 1959	Dec. 1958	Dec. 1957
Brass	10,172	94,589	109,205
Galvanizing	8,253	90,386	95,054
of which:			
General	2,906	33,315	33,822
Sheet	1,951	32,062	23,397
Wire	1,833	20,165	20,144
Tube	1,563	14,844	17,691
Rolled zinc	1,849	25,094	23,852
Zinc oxide	2,079	26,591	27,962
Zinc diecasting & forming alloy	6,300	49,082	57,144
Zinc dust	1,208	10,256	11,838
Miscellaneous uses	968	10,998	10,835
Total all trades	30,829	306,996	335,890
of which:			
Slab zinc			
High purity (99.99%)	6,626	53,355	61,712
Electrolytic & high grade (99.95%)	5,441	57,927	62,881
G.O.B. Prime Western & debased	10,688	112,208	122,673
Other virgin material	235	2,833	2,505
Remelted zinc	525	5,316	5,874
Scrap—(zinc content)			
Zinc metal, alloys & residues	2,988	30,957	32,623
Brass and other copper alloys	4,326	44,400	47,622

METALS, MARCH, 1960

## U. K. LEAD STATISTICS

According to the British Bureau of Non-Ferrous Metal Statistics lead stocks in the U. K. at the end of December rose to 48,005 tons (39,330 tons imported and 8,705 tons English refined) against 46,984 tons in November (38,494 tons imported and 8,490 tons English refined). Production was up slightly at 7,881 tons compared with the November total of 7,872 tons. Full consumption details are given below:

	—12 months ending—		
	Dec. 1959	Dec. 1958	Dec. 1957
Cable	8,851	100,071	96,148
Batteries — as metal	3,423	29,466	31,551
Battery oxides	2,829	26,076	27,826
Tetraethyl lead	2,357	20,131	23,732
Other oxides & compounds	2,570	25,776	27,332
White lead	750	8,892	8,313
Shot (inc. bullet rod)	421	4,540	4,152
Sheet & pipe	5,211	66,247	68,751
Foil & collapsible tubes	337	4,111	3,830
Other rolled & extruded	610	5,818	6,940
Solder	1,407	13,315	14,838
Alloys	1,797	18,902	18,451
Miscellaneous uses	1,209	12,708	14,039
Total consumption	31,772	336,053	345,903

of which:

Imported virgin lead	16,305	166,784	175,910
English refined	7,103	76,001	77,085
Scrap including remelted	8,364	93,268	92,908



# U. S. COPPER MARKET SENTIMENT IMPROVES: CUSTOM SMELTERS FIRM AT 33c; METAL MOVING FOR EXPORT

Lead and Zinc Quiet, Prices Unchanged With Consumption Expected to Rise; Tin Gradually Eases; Key Silicon Aluminum Alloys Reduced; Cobalt Cut 25c

March 23, 1960

**A**FTER a feeling of uneasiness following the settlement of all the copper strikes but one, the sentiment in the copper market took a slight turn for the better. Lead and zinc markets continued quiet, with prices steady. Tin price fluctuations remained within a relatively narrow range. Aluminum producers reduced prices about 3 per cent for key types of silicon alloy aluminum pig used by foundries in the production of die castings for the auto industry and other fields. Among the other metals, cobalt prices were reduced about 25.00c a pound. There were no significant changes noted in quicksilver, platinum and silver.

## Early Easiness in Copper

The settlement of virtually all of the strikes in the copper industry brought with it price weakness that saw custom smelters on March 10 sell their electrolytic copper at 33.00c a pound delivered. This represented a drop of 2.00c a pound from the previously quoted level of 35.00c, at which no business had been consummated for the last week this level was quoted. The 2.00c drop also brought the smelter quotation in line with that of the primary producers, who continued to adhere to 33.00c delivered. The easier tone in copper at the time of the 2.00c drop was felt in related fields.

Reports were current that as a result of keen competition for business some brass and bronze ingot prices were being cut 2.00c to 3.00c a pound, especially by some small producers. The large ingot makers, while cognizant of the situation, did not take any official action. The sharp drop in scrap prices was a factor in bringing about the lower ingot prices.

Domestic fabricators of copper water tubing, hard hit by foreign competition, also were said to be making concessions. Foreign manufacturers were reported offering copper water tube in the U. S. market not only below those of domestic fabricators but also below the prices at which these tubes were being sold abroad.

For a time it looked as though the

custom smelter quotation of 33.00c was hanging by only a thread and the consensus was that it would be lower in April. But sentiment underwent a change, with less certainty of a price decline at this writing — first because some improvement in sales manifested itself, and secondly because the major portion of the business being booked for April by the custom smelters was at the April average.

One smelter is sold out for April and another did not have much left for sale in that month. With such a situation prevailing, it apparently will be to the custom smelters' advantage to maintain the 33.00c price next month so as to affect the average. No real price test may come, however, until mid-April when consumers normally begin to cover their May requirements.

As for the large primary producers, their available supply for April has either been sold or earmarked for sale. Some producers and custom smelters felt that many fabricators were playing it too close to their vest, as far as their copper buying was concerned. If nothing happens to interfere with copper production, the fabricators may benefit by their buying policy. However, should there be any production stoppages, another buying wave might develop that could easily change the entire copper picture.

## Export Business

Meanwhile, enough export business is now being consummated daily to again warrant a daily export price. Sales at this writing have been reported for shipment to South America, Japan and to India. The export price for April and May shipment was 31.50-31.75c a pound, f.a.s. New York, on March 23.

Another development is the resale of copper abroad that was destined to be shipped to this country. There is a good demand for copper in England and on the Continent. Wire bars that were bought a month or two ago for shipment to the U. S. were being resold abroad, thereby affecting a saving in the import duty of 1.70c a pound as well as the freight.

In the outside market at New York,

sentiment also was better with April delivery at 32.50c.

Custom smelters currently were bidding for scrap copper on the basis of 23.75c a pound for No. 2 heavy copper and wire. Red metal scrap was not being freely offered to smelters but on the other hand, in view of the lack of business in forward electro copper, smelters were not reaching out for scrap.

## Copper Statistics

Consumers of fabricated products are believed to be underbuying their needs. This has been the contention of brass and wire mills, which seems to be borne out by the statistics for February. The figures revealed that the volume of new business that the brass and wire mills, and foundries booked from their customers in in February amounted to only 75,763 tons, a drop of 17,057 tons from the preceding month, and with the exception of last December, the smallest volume of new business for any month since July, 1957. The shipments of fabricated products (apparent consumption) in February totaled 103,072 tons, little changed from the 102,295 tons for January.

And at the rate at which the domestic copper mines have been getting back into production, the recent strikes may soon be a memory. Domestic refined copper output in February, even though the Laurel Hill refinery was still on strike, came to 105,417 tons as compared with 856,491 tons in January. Domestic deliveries of refined metal to consumers in February also were higher, at 111,851 tons as against 102,829 tons in the preceding month. Domestic stocks of refined copper at the end of February dipped to 64,007 tons from 68,550 tons at the end of January.

## Strike Front

Progress was reported being made in negotiations between the United Steelworkers of America, on strike at the Laurel Hill refinery of Phelps Dodge, and management.

Negotiations between Anaconda in Chile and the union representing the workers at the company's mines, Potrerillos and El Salvador, are continuing. It is likely talks between the

union and management will continue until the very last day of the contract, April 30, 1960. But informed quarters believe there is a 50-50 chance that a strike may be averted.

Riots in the Union of South Africa are not near any copper mines. But some quarters are concerned that the unrest may spread to production areas in other African countries.

#### Lead, Zinc Consumption

Both lead and zinc consumption in the U. S. should increase about 10 per cent in 1960 as compared with 1959, Andrew Fletcher, chairman, and Francis Cameron, president, St. Joseph Lead Company, told employees in a special report. The executives said that if a moderate increase in U. S. tariffs is not granted by Congress or the Administration, they expected the lead and zinc import quotas to continue.

Mr. Fletcher and Mr. Cameron said, "After a full year's operation under the quota system it appeared that while the quota was not restrictive enough in the case of lead it may be with respect to zinc, particularly if consumption of both metals in the coming year should develop as anticipated from current business forecasts."

#### Lead at 12.00c New York

Consumers of lead were placing fair sized orders for April shipment, mainly at the April average although some business was placed at the spot price of 12.00c a pound New York.

Domestic shipments of refined lead to consumers and the output have been mounting ever since the strikes ended last December. The shipments to consumers in January rose to 42,083 tons from 24,516 tons in December. They were the largest since last August. Production of refined lead in January came to 40,043 tons compared with 30,160 tons in the preceding month. At the end of January the refined stocks of lead in the hands of producers totaled 117,589 tons, a decrease of 2,404 tons from the preceding month.

#### Zinc 13.00c East St. Louis

Zinc business currently being placed was for April shipment. The orders were booked at the spot price of 13.00c a pound East St. Louis for Prime Western grade, and also at the monthly average. Sizable orders for Special High Grade for April shipment have been booked and at the 1.75c a pound premium over the Prime Western quotation. The 1.75c premium becomes effective April 1. Currently it is 1.50c a pound. The premium for Regular High Grade

zinc, on April 1, will move up from 1.25c a pound to 1.50c a pound.

#### February Zinc Figures

The zinc statistics for February exceeded the expectations of optimists. February statistics for all grades of zinc follow in tons, with the January totals in parentheses: production, 74,738 (73,226); domestic shipments, 78,029 (79,325); stocks at end of month, 137,062 (144,471).

#### Tin Price Eases

Tin prices during the month in review gradually eased. Spot Straits tin was quoted at 99.75c a pound at New York on March 23, compared with the last previously quoted price in this space of 100.00c for February 9. The high for the February 9-March 23 period was the 102.125c a pound on February 18. The low for the same period was the 99.75c for March 23.

#### Alcoa Cuts Some Alloys

Aluminum Co. of America reduced prices about 3 per cent for key types of silicon alloy aluminum pig. The reductions, Alcoa said, apply only to the 50-pound pigs and not for the 30-pound or 10-pound pigs. The reductions are said to reflect improvements in the technology of alloying aluminum in the smelter.

Secondary aluminum smelters also marked down their selling prices for silicon-bearing aluminum alloy grades, in order to remain competitive with the primary producers.

#### Cobalt Prices Reduced

African Metal Corp., effective with shipments March 1, reduced prices for its cobalt products. The new price for cobalt metal granules (shot) packed in 500-pound kegs is \$1.50 a pound, a decrease of 25.00c a pound from the previous level.

#### Platinum Unchanged

Platinum was maintained at \$81 to \$85 an ounce, which range was established February 17.

Consumption of platinum-group metals in the United States in 1959 indicated by sales to consuming industries, increased 37 per cent to about 850,000 ounces, according to the Bureau of Mines, United States Department of the Interior. Sales of platinum increased 46 per cent, palladium sales increased 31 per cent and sales of iridium, osmium, rhodium, and ruthenium together increased 50 per cent over those of 1958. Imports of platinum-group metals in 1959 were 51 per cent above those of the preceding year.

Fourth quarter sales of platinum by refiners and dealers to domestic consumers were 67 per cent higher than in the preceding quarter with in-

creases recorded in all industrial categories. Palladium sales rose 87 per cent over those of the third quarter due chiefly to the sharp rise in electrical requirements. The total quantity of iridium, osmium, rhodium, and ruthenium sold for industrial and artistic use rose 80 per cent in the period; sales of rhodium, which comprised nearly three-fourths of the total, were nearly double those of the third quarter. Published price quotations on platinum-group metals per fine troy ounce remained virtually unchanged during the quarter except for palladium which increased from \$18-\$20 at the beginning of the period to \$22-\$24 in the first week in November, remaining unchanged thereafter.

#### Quicksilver and Silver

Spot quicksilver was quoted at \$213 to \$215 per flask of 76 pounds as of February 17.

Silver was unchanged at 91.375c an ounce New York, which level was established on September 3, 1959.

### British Metal Markets

(Continued from Page 14)

Exchange nearby metal is certainly not being pressed for sale, with the result that a backardation has reappeared.

At the beginning of March the Board of Trade announced officially that it intends to dispose of its remaining unsold stocks of zinc, totalling about 53,000 tons (made up of 35,000 tons of High Grade, 12,750 tons of Special High Grade and 5,250 tons of G.O.B.) The disposal programme, however, is fairly flexible and may take up to four years to complete. The greater part of the metal will be sold back to the original suppliers, including 3,050 tons of G.O.B. and 2,250 tons of Special High Grade which are being sold to the original suppliers for delivery before the end of June. Additionally, 32,000 tons of High Grade and about 4,000 tons of Special High Grade will be offered back to the agents of the original suppliers but 3,100 tons of zinc are to be offered for sale by tender for delivery and pricing between April and September. This includes the whole of the remaining G.O.B. stocks of about 2,200 tons, 200 tons of High Grade and about 700 tons of Special High Grade.

There has been, of course, a good deal of interest shown here in the final settlement of the common external tariff of the European Common Market for lead and zinc at 0.6 U.S. cents per lb.

# Daily Metal Quotations for February, 1960

The following quotations are taken from the Daily Metal Reporter\*  
(In Cents Per Pound)

FEBRUARY	Copper			Tin—		Lead		Zinc		Alumi- num		Anti- mony	Silver							
	Producers' Price	Del. Conn.	Custom Smelters' or Outside Price	Electro	Refinery	Lake Del.	Aver. Prompt Electrolytic Export Price F. a. s. N. Y.	Spot	Prompt	New York	Outside St. Louis			Prime West. E. o. b.	Prime West. Del. N. Y.	Brass Spec. E. St. Louis	High Grade Delivered	Spec. High Grade Delivered	30-Lb. Ingot (t. o. b.)	Domestic Spot 99.5% (t. o. b.)
1	33.00	33.00	35.00	33.60	33.60	33.00	Nom.	100.50	100.375	12.00	11.80	13.00	13.50	13.25	14.25	14.50	28.10	29.00	91.375	91.375
2	33.00	33.00	35.00	33.60	33.60	33.00	Nom.	100.375	100.375	12.00	11.80	13.00	13.50	13.25	14.25	14.50	28.10	29.00	91.375	91.375
3	33.00	33.00	35.00	33.60	33.60	33.00	Nom.	100.375	100.375	12.00	11.80	13.00	13.50	13.25	14.25	14.50	28.10	29.00	91.375	91.375
4	33.00	33.00	35.00	33.60	33.60	33.00	Nom.	100.625	100.50	12.00	11.80	13.00	13.50	13.25	14.25	14.50	28.10	29.00	91.375	91.375
5	33.00	33.00	35.00	33.60	33.60	33.00	Nom.	100.75	100.625	12.00	11.80	13.00	13.50	13.25	14.25	14.50	28.10	29.00	91.375	91.375
8	33.00	33.00	35.00	33.60	33.60	33.00	Nom.	101.00	101.00	12.00	11.80	13.00	13.50	13.25	14.25	14.50	28.10	29.00	91.375	91.375
9	33.00	33.00	35.00	33.60	33.60	33.00	Nom.	101.00	101.00	12.00	11.80	13.00	13.50	13.25	14.25	14.50	28.10	29.00	91.375	91.375
10	33.00	33.00	35.00	33.60	33.60	33.00	Nom.	101.25	101.00	12.00	11.80	13.00	13.50	13.25	14.25	14.50	28.10	29.00	91.375	91.375
11	33.00	33.00	35.00	33.60	33.60	33.00	Nom.	101.375	101.125	12.00	11.80	13.00	13.50	13.25	14.25	14.50	28.10	29.00	91.375	91.375
15	33.00	33.00	35.00	33.60	33.60	33.00	Nom.	101.875	101.375	12.00	11.80	13.00	13.50	13.25	14.25	14.50	28.10	29.00	91.375	91.375
16	33.00	33.00	35.00	33.60	33.60	33.00	Nom.	101.875	101.50	12.00	11.80	13.00	13.50	13.25	14.25	14.50	28.10	29.00	91.375	91.375
17	33.00	33.00	35.00	33.60	33.60	33.00	Nom.	102.00	101.75	12.00	11.80	13.00	13.50	13.25	14.25	14.50	28.10	29.00	91.375	91.375
18	33.00	33.00	35.00	33.60	33.60	33.00	Nom.	102.125	101.875	12.00	11.80	13.00	13.50	13.25	14.25	14.50	28.10	29.00	91.375	91.375
19	33.00	33.00	35.00	33.60	33.60	33.00	Nom.	101.875	101.625	12.00	11.80	13.00	13.50	13.25	14.25	14.50	28.10	29.00	91.375	91.375
23	33.00	33.00	35.00	33.60	33.60	33.00	Nom.	101.50	101.25	12.00	11.80	13.00	13.50	13.25	14.25	14.50	28.10	29.00	91.375	91.375
24	33.00	33.00	35.00	33.60	33.60	33.00	Nom.	101.125	100.875	12.00	11.80	13.00	13.50	13.25	14.25	14.50	28.10	29.00	91.375	91.375
25	33.00	33.00	35.00	33.60	33.60	33.00	Nom.	100.875	100.75	12.00	11.80	13.00	13.50	13.25	14.25	14.50	28.10	29.00	91.375	91.375
26	33.00	33.00	35.00	33.60	33.60	33.00	Nom.	100.875	100.75	12.00	11.80	13.00	13.50	13.25	14.25	14.50	28.10	29.00	91.375	91.375
29	33.00	33.00	35.00	33.60	33.60	33.00	Nom.	100.875	100.75	12.00	11.80	13.00	13.50	13.25	14.25	14.50	28.10	29.00	91.375	91.375
AV.	33.00	33.00	35.00	33.60	33.60	33.00	Nom.	101.178	100.987	12.00	11.80	13.00	13.50	13.25	14.25	14.50	28.10	29.00	91.375	91.375
HL	33.00	33.00	35.00	34.60	34.60	33.00	Nom.	102.125	101.875	12.00	11.80	13.00	13.50	13.25	14.25	14.50	28.10	29.00	91.375	91.375
O.	33.00	33.00	35.00	32.60	32.60	33.00	Nom.	100.375	100.375	12.00	11.80	13.00	13.50	13.25	14.25	14.50	28.10	29.00	91.375	91.375

\* When split quotations prevail the daily average price is listed. The highs and lows for the month take into consideration the levels reached at both sides of such ranges.



# United States Duties on Principal Ore and Metal Imports

(Including Revisions in Effect June 30, 1957, Under Geneva Agreements)

(Quantities Are in Pounds Unless Otherwise Stated; n.s.p.f. Stands for "Not Specially Provided For.")

## COPPER

NOTE — The excise tax of 4c a pound on copper (which was reduced to 2c a pound by the Geneva Trade Agreement) was suspended in April, 1947, until March 31, 1949, and on expiration it was further suspended until June 30, 1950. The tax was reimposed on July 1, 1950. It was suspended again on May 22, 1951, retroactive to April 1, 1951, and until February 15, 1953, and again until June 30, 1954. Suspension further extended to June 30, 1955, and again until June 30, 1956. The tax was restored July 1, 1956. The 1956 Geneva Agreement provided for 5% reductions effective on June 30 of 1956, 1957 and 1958, provided the prices were above 24c; if the price is below 24c the 2c tax will prevail.

Copper ore and concentrates, usable as flux, etc., copper content	1.70c lb.
Copper ore and concentrates, product of Cuba, copper content	free
Copper ore and concentrates, product of Philippines, copper content	0.17c lb.
Copper ore and concentrates, copper content	1.70c lb.
Regulus, black, or coarse copper, and cement copper, copper content	1.70c lb.
Unrefined black, blister, and converter copper in pigs or converter bars, copper content	1.70c lb.
Refined copper in ingots, plates or bars, copper content	1.70c lb.
Copper rolls, rods or sheets	1 1/4c lb. (plus 1.70c lb. ††)
Copper seamless tubes and tubing	3 1/4c lb. (plus 1.70c lb. ††)
Copper plain wire	12 1/4% (plus 1.70c lb. ††)
Copper brazed tubes†	4.50c lb. (plus 1.70c lb. ††)
Old and scrap copper, fit only for remanufacture: and scale and clippings, copper content	1.70c lb.

†† Copper content.

## BRASS

Brass rods, sheets, plates, bars, strips, Muntz or yellow metal sheets, sheathing, bolts, piston rods, shafting and bronze rods, tubes and sheets	2c lb.
Brass tubes and tubing, seamless	2c lb.
Brass tubes, brazed, angles and channels	6c lb.
Brass and bronze wire	12 1/2%

## LEAD

NOTE — Import duties on lead-bearing ores, flue dust, and mattes of all kinds, lead bullion or base bullion, lead in pigs and bars, lead dross, reclaimed lead and antimonial lead were suspended February 12, 1952, and reimposed on June 26, 1952. Lead scrap duty was reimposed July 1, 1952.

Lead-bearing ores and mattes, n. s. p. f., lead content	3/4c lb.
Bullion or base bullion, lead content	1 1/16c lb.
Pigs and bars, lead content	1 1/16c lb.
Reclaimed, scrap, dross, lead content	1 1/16c lb.
Babbitt metal and solder, lead content	1 1/16c lb.
Pipe, sheets, shot, glaziers' lead, and wire	1 5/16c lb.
Type metal and antimonial lead, lead content	1 1/16c lb.
White lead	1.05c lb.
Litharge	1 1/4c lb.
Red lead	15/16c lb.
Orange mineral	1c lb.

## ZINC

NOTE — Import duties on zinc-bearing ores, and on zinc in blocks, pigs and slabs were suspended February 12, 1952, and reimposed on July 24, 1952. Tax on old zinc and dross and skimmings reimposed July 1, 1953.

Zinc-bearing ores, except pyrites containing not more than 3% zinc, zinc content	6/10c lb.
Zinc contained in zinc-bearing ores, n. e. s., not recoverable, zinc content	6/10c lb.
Zinc, old and worn out, fit only for remanufacture	3/4c lb.
Dross and skimmings	3/4c lb.
Zinc in blocks, pigs or slabs	7/10c lb.
Zinc in sheets	1c lb.
Zinc sheets, plated with nickel or other base metal, or solutions	1 1/4c lb.

Zinc dust	7/10c lb.
Zinc die-casting alloys	12 1/2%
Zinc oxide and leaded zinc oxides containing not more than 25% lead, dry	3/5c lb.
ground in or mixed with oil or water	1c lb.

## MISCELLANEOUS METALS AND ORES

Aluminum, metal and alloys, crude, except alloys elsewhere provided for†	1.25c lb.
Aluminum scrap	free
Aluminum plates, sheets, bars, rods, circles, squares, etc.†	2.50c lb.
Antimony ore, antimony content	free
Antimony metal and regulus	2c lb.
Antimony needle or liquidated	1/4c lb.
Antimony oxide	1c lb.
Antimony sulphides	1/2c lb. & 12 1/2%
Arsenic, metallic†	2.50c lb.
Arsenious acid or white arsenic	free
Bauxite, crude*	free
Bauxite, refined**	1/4c lb.
Bismuth	1 1/8%
Bismuth salts and compounds	35%
Beryllium metal†	21%
Beryllium ore	free
Cadmium	3 3/4c lb.
Cadmium flue dust, cadmium content	free
Chrome ore or chromite	free
Chrome or chromium metal†	10 1/2%
Cobalt metal	free
Cobalt ore and concentrates, cobalt content	free
Magnesium, metallic†	50%
Magnesium powder, sheets, wire†	17c lb. & 8 1/2%
Magnesium alloys	20c lb. & 10%
Magnesium scrap	free
Manganese ores, containing over 10% manganese, manganese content	1/4c lb., except Cuba, free
Molybdenum ore or concentrates, molybdenum content†	30c lb.
Nickel ore, matte and oxide	free
Nickel and alloys, nickel chief value, n. s. p. f., in pigs, ingots, shot, cubes, grains, cathodes, or similar forms	1 1/4c lb.
Nickel, bars, rods, plates, sheets, castings, strips, wire or electrodes	12 1/2%
Nickel scrap	free
Nickel tubes, tubing	6 3/4% (if cold rolled, drawn or worked — 2 1/2% extra)
Platinum, grain, nuggets, sponge and scrap, oz. troy	free
Platinum in ingots, bars, sheets, or plates, not less than 1/8 in. thick, oz. troy	free
Platinum, ores, platinum content, oz. troy	free
Quicksilver or mercury	25c lb.
Selenium and salts	free
Tantalum	12 1/2%
Tin ore, cassiterite, and black oxide of tin, tin content	free
Tin in bars, blocks, pigs, grain, granulated, and scrap, and alloys, chief value tin, n. s. p. f.	free
Tungsten ore or concentrates, tungsten content	50c lb.

\*Crude bauxite import duty suspended through July 15, 1960. \*\*Under Public Law 25 alumina imported for use in aluminum production is free for entries from July 17, 1956 through July 15, 1960. †Tariff reduced 5% on June 30, 1958, under Geneva Agreement which expires on June 30, 1959.

# Copper Statistics Reported by Copper Institute

## Combined Totals in U. S. A. and Outside U. S. A.

(In tons of 2,000 pounds)								
Crude Production		Refined	Deliveries to Refined Stock		Stock Increases or Decreases			
	Primary	Secondary	Production	Customers	End of Period	Blister	Refined	Total
1957								
Total	2,897,719	123,270	3,035,588	2,853,307	458,340	—14,599	+ 103,920	+ 89,321
1958								
Total	2,713,412	138,696	2,811,108	2,918,404	262,544	+ 41,000	—195,796	—154,796
1959								
May	279,629	11,695	283,024	266,378	350,343	+ 8,300	+ 20,472	+ 28,772
June	277,855	12,347	284,420	294,232	345,429	+ 5,733	— 4,914	+ 819
July	256,729	9,198	274,752	230,524	390,168	— 8,825	+ 44,739	+ 35,914
August	232,944	4,552	223,452	237,944	378,649	+ 11,543	—11,519	+ 24
September	186,837	7,652	187,294	232,282	354,926	+ 7,195	—23,723	—16,528
				(Oct. 1)	356,614			
October	184,409	10,955	181,707	210,945	330,438	+ 13,657	—26,176	—12,519
November	192,353	10,631	186,496	229,281	311,049	+ 16,388	—19,389	— 3,001
December	211,575	9,767	203,614	238,095	293,006	+ 17,728	—18,043	— 315
Total	2,860,454	134,583	2,926,657	2,973,026	293,006	+ 68,380	+ 28,774	+ 97,154
1960								
January**	259,779	13,116	257,614	272,040	304,038	+ 15,278	— 3,426	+ 11,852
February	272,427	12,597	269,952	280,656	302,351	+ 15,072	— 1,687	+ 13,385
**Starting with January, 1960, the figures reflect reports from four additional companies.								

\*\*Starting with January, 1960, the figures reflect reports from four additional companies.

### In U. S. A.

1957								
Total	1,116,380	112,060	1,616,964	1,277,946	181,024		+60,379	
1958								
Total	1,008,170	131,294	1,446,540	1,179,416	80,722		-100,302	
1959								
May	104,236	9,933	135,031	135,135	86,132		+11,809	
June	99,419	11,352	138,403	150,117	85,674		-458	
July	81,662	8,323	134,020	108,127	103,432		+17,558	
August	51,327	3,994	83,677	90,123	94,109		-9,323	
September	19,503	6,578	44,468	92,501	79,826		-14,283	
				(Oct. 1)	81,514			
October	20,931	9,861	44,218	68,648	78,308		-3,206	
November	18,351	9,710	37,299	83,626	74,642		-3,666	
December	26,686	8,595	46,302	90,039	64,763		-9,879	
Total	805,875	121,462	1,221,612	1,312,328	64,763		-17,647	
1960								
January	65,677	10,707	86,491	102,829	68,550		+3,787	
February	87,966	10,647	105,417	111,851	64,007		-4,543	

### Outside U. S. A.\*

1957								
Total	1,781,339	11,210	1,418,624	1,575,361	277,316		+43,541	
1958								
Total	1,705,242	7,402	1,364,568	1,738,988	181,822		-95,494	
1959								
May	175,393	1,762	147,993	131,243	264,211		+8,663	
June	178,387	995	146,017	144,115	259,755		-4,456	
July	175,067	875	140,732	122,397	286,736		+26,981	
August	181,617	558	142,276	147,821	284,540		-2,196	
September	167,334	1,074	142,646	139,781	275,100		-9,440	
October	163,478	1,093	137,489	142,297	252,130		-22,970	
November	173,902	921	149,197	145,655	236,407		-15,723	
December	184,889	1,172	157,312	148,056	228,243		-8,164	
Total	2,054,579	13,121	1,705,045	1,660,698	228,243		+46,421	
1960								
January**	194,099	2,409	171,123	169,211	235,488		-7,213	
February	184,461	1,950	164,535	168,805	238,344		+2,856	

\*Excluding Russia, Yugoslavia, Norway, Sweden, Japan and Australia

\*\*Starting with January, 1960, the figures reflect reports from four additional companies.

### Electrolytic Copper

	Producers' Price, Del. Valley			
	Monthly Average Prices			
	1957	1958	1959	1960
Jan.	36.00	25.69	29.00	33.00
Feb.	33.318	25.00	29.972	33.00
Mar.	32.00	25.00	31.14	...
Apr.	32.00	25.00	31.50	...
May	32.00	25.00	31.50	...
June	30.955	25.36	31.50	...
July	29.25	26.125	30.587	...
Aug.	28.639	26.50	30.00	...
Sept.	27.031	26.50	30.571	...
Oct.	27.00	27.548	30.75	...
Nov.	27.00	29.00	32.375	...
Dec.	27.00	29.00	33.00	...
Aver.	30.183	26.31	30.991	...

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### Electrolytic Copper

	Custom Smelters' Price, Del. Valley			
	Monthly Average Prices			
	1957	1958	1959	1960
Jan.	34.87	24.577	29.429	35.00
Feb.	32.273	23.557	30.361	35.00
Mar.	30.952	23.326	33.31	...
Apr.	31.24	23.66	32.84	...
May	30.163	23.865	32.00	...
June	29.60	25.52	31.477	...
July	28.39	29.231	29.52	...
Aug.	27.862	26.52	30.056	...
Sept.	25.948	26.355	33.00	...
Oct.	25.722	28.577	33.00	...
Nov.	25.435	29.829	Nom.	...
Dec.	25.26	28.846	35.00	...
Aver.	28.93	25.905	31.808	...

### Lake Copper

	Producers' Price Delivered			
	Monthly Average Prices			
	1957	1958	1959	1960
Jan.	36.00	25.69	29.00	33.00
Feb.	33.182	25.00	30.00	33.00
Mar.	32.00	25.00	31.14	...
Apr.	32.00	25.00	31.50	...
May	32.00	25.00	31.50	...
June	30.955	25.00	31.50	...
July	29.25	25.75	30.587	...
Aug.	28.611	26.50	30.00	...
Sept.	27.00	26.50	31.107	...
Oct.	27.00	27.577	31.50	...
Nov.	27.00	29.00	32.833	...
Dec.	27.00	29.00	33.00	...
Aver.	30.162	26.251	31.222	...



## Fabricators' Copper Statistics

(In tons of 2,000 pounds)

	Fabricators' Stocks of Refined Cop.	Unfilled Purchases of Refined by Fab. from Producers	Fabricators' Working Stocks	Unfilled Sales by Fabricators to Customers	Actual Copper Consumed by Fabricators	Excess Fabricators' Stocks Over Orders Bld.
1954						
Total	360,526	58,125	304,619	136,581	1,231,840	— 22,549
1955						
Total	.....	.....	.....	.....	1,418,241	.....
1956						
Total	.....	.....	.....	.....	1,416,378	.....
1957						
July	432,918	85,728	341,684	144,410	77,991	+ 32,552
Aug.	429,627	82,788	344,315	144,375	110,323	+ 23,826
Sept.	425,168	80,436	344,530	144,538	106,927	+ 16,536
Oct.	420,130	80,774	341,869	138,420	119,161	+ 20,615
Nov.	428,520	68,249	345,832	128,719	98,725	+ 22,218
Dec.	430,171	75,627	347,465	138,631	83,067	+ 19,702
Total	.....	.....	.....	.....	1,279,086	.....
1958						
Jan.	445,514	57,917	348,426	123,756	94,642	+ 31,249
Feb.	452,673	52,342	351,035	128,330	86,625	+ 25,650
Mar.	448,125	71,693	346,875	141,387	83,694	+ 31,556
Apr.	450,442	76,002	347,607	145,623	79,613	+ 33,814
May	441,001	78,194	346,404	138,190	88,447	+ 34,601
June	433,526	72,383	330,301	145,162	109,011	+ 30,446
July	431,796	77,362	326,263	153,529	79,353	+ 29,366
Aug.	421,931	78,194	323,687	150,436	96,717	+ 26,022
Sept.	416,887	71,025	319,281	145,390	105,474	+ 28,941
Oct.	399,113	91,019	315,929	156,692	138,017	+ 17,511
Nov.	419,914	88,580	328,238	157,799	110,487	+ 22,457
Dec.	447,123	90,401	326,438	177,869	92,573	+ 35,217
Total	.....	.....	.....	.....	1,165,364	.....
1959						
Jan.	457,387	101,182	337,761	172,698	108,556	+ 44,070
Feb.	459,046	123,321	390,522	183,113	116,565	+ 58,732
Mar.	449,441	130,785	334,904	211,547	133,259	+ 33,775
Apr.	463,582	125,250	337,282	204,618	120,680	+ 46,932
May	474,657	133,694	338,835	210,424	124,060	+ 59,092
June	492,072	111,229	343,585	191,875	133,702	+ 67,841
July	518,699	110,367	357,474	193,338	81,500	+ 68,254
Aug.	487,259	97,786	359,049	191,476	121,563	+ 34,520
Sept.	462,880	111,675	360,760	206,254	116,880	+ 7,541
Oct.	431,612	119,806	347,136	211,359	100,302	— 7,077
Nov.	412,401	127,162	338,856	224,442	102,837	— 23,735
Dec.	414,757	130,324	340,349	202,775	88,706	+ 1,957
Total	.....	.....	.....	.....	1,347,610	.....
1960						
Jan.	414,652	141,860	340,233	193,300	102,295	+ 22,979
Feb.	423,131	132,696	343,196	165,991	103,072	+ 46,640

## Scrap Copper Receipts by Custom Smelters and Refineries in United States\*

	(In Short Tons)									
	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960
Jan. ....	6,640	4,528	6,486	9,859	11,047	14,322	17,506	16,024	14,511	15,165
Feb. ....	5,153	3,633	10,337	8,490	15,198	14,497	11,145	9,518	14,712	14,614
Mar. ....	7,912	5,243	19,991	9,738	12,198	15,921	13,994	11,783	19,522	.....
Apr. ....	8,553	6,214	16,583	9,004	13,162	17,233	14,288	15,279	17,525	.....
May ....	8,458	8,033	10,857	8,687	15,133	20,805	12,397	13,989	13,960	.....
June ....	8,628	4,425	10,945	13,309	14,765	14,758	11,949	13,945	15,065	.....
July ....	6,642	5,188	9,063	10,260	12,197	12,510	8,926	12,185	11,144	.....
Aug. ....	6,113	5,003	7,137	10,100	12,197	12,510	11,645	11,896	7,468	.....
Sept. ....	3,561	4,667	9,042	10,641	15,037	9,518	9,756	9,268	10,070	.....
Oct. ....	3,336	4,602	10,065	11,662	12,897	15,570	13,151	23,088	12,860	.....
Nov. ....	3,179	4,724	7,815	10,879	9,865	11,369	11,146	16,425	11,773	.....
Dec. ....	4,538	6,208	11,476	14,876	13,180	14,613	11,237	10,796	10,894	.....
Total ..	71,812	62,470	129,798	127,449	154,714	173,748	147,080	164,196	159,507	.....

\* As compiled by Copper Institute.

## Brass and Bronze Ingot Monthly Shipments

(NET TONS)

The following figures showing the combined shipments of ingot brass and bronze are compiled by the Ingot Brass and Bronze Industry and represent in excess of 95 per cent of the deliveries of the entire industry.

	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960
Jan. ....	18,874	28,416	28,315	23,423	20,661	25,201	27,736	25,681	20,468	22,048	22,695
Feb. ....	18,487	27,168	24,211	25,429	19,920	25,349	24,949	20,769	17,413	23,746	23,129
Mar. ....	22,494	31,997	23,890	28,256	23,653	29,713	28,310	21,948	18,825	26,109	.....
Apr. ....	22,118	30,473	22,547	25,044	24,746	27,641	25,808	23,507	18,009	26,115	.....
May ....	23,643	33,267	21,740	21,660	22,269	23,708	23,437	22,037	17,191	23,967	.....
June ....	25,093	33,817	21,274	20,818	22,348	23,141	18,842	18,888	17,962	22,922	.....
July ....	21,609	32,016	18,947	19,321	17,074	18,513	17,364	16,695	16,658	20,346	.....
Aug. ....	29,689	25,285	21,807	20,156	21,664	27,013	23,812	19,654	17,882	21,741	.....
Sept. ....	28,811	22,285	22,770	21,463	22,464	26,349	20,929	19,670	20,540	22,685	.....
Oct. ....	32,240	23,124	25,811	22,280	24,080	25,228	23,045	22,800	23,225	23,067	.....
Nov. ....	31,748	23,544	23,441	21,806	23,061	25,102	21,818	19,767	20,758	22,283	.....
Dec. ....	28,575	20,987	22,983	20,541	21,274	21,448	18,046	16,875	18,676	19,535	.....
Total ..	303,563	332,378	277,736	271,251	263,233	298,406	274,096	248,297	227,607	274,562	.....
Aver. ....	25,297	27,615	23,145	22,694	21,936	24,867	22,841	20,681	18,133	22,864	.....

## Mine Production of Copper in United States

	(U. S. Bureau of Mines)			
	(in short tons)			
	Eastern	Missouri	Western	Total
1957				
Ttl.	79,369	1,800	995,753	1,076,922
1958				
July	4,188	132	56,672	61,222
Aug.	5,570	127	61,342	67,039
Sept.	5,312	114	77,561	82,987
Oct.	7,002	60	85,075	91,518
Nov.	6,617	60	87,379	94,056
Dec.	6,614	70	88,070	94,514
Ttl.	76,849	1,250	902,021	980,304
1959				
Jan.	6,590	126	90,351	97,067
Feb.	5,883	130	81,849	87,862
Mar.	6,513	140	91,681	98,334
Apr.	7,240	150	93,209	100,599
May	7,007	110	94,493	101,610
June	7,245	124	87,035	94,404
July	6,763	111	80,058	86,932
Aug.	6,813	116	47,910	54,839
Sept.	6,655	123	20,342	27,120
Oct.	7,092	152	22,669	29,913
Nov.	3,226	140	22,529	25,895
Dec.	3,228	128	22,504	25,860
Ttl.	74,255	1,550	754,630	830,435

## Average Custom Smelters' Scrap Buying Prices

(Cents per pound for carload lots del. consumers' works)

	No. 1 Copper Scrap	No. 2 Copper Scrap	Light Copper Scrap	Refinery Brass*
1958				
Aver.	21.788	20.282	18.035	18.047
1959				
Jan.	25.29	23.79	21.54	22.79
Feb.	26.42	24.92	22.67	24.11
Mar.	28.79	27.29	25.04	26.79
Apr.	28.04	26.50	24.29	26.04
May	27.81	26.31	24.06	25.81
June	26.80	25.30	23.05	24.80
July	25.14	23.64	21.39	23.14
Aug.	25.762	24.762	22.012	23.762
Sept.	26.369	24.869	22.319	24.369
Oct.	27.929	25.405	23.155	24.905
Nov.	30.00	26.208	23.958	24.528
Dec.	29.50	25.993	23.743	24.239
Av.	27.321	25.377	23.102	24.774
1960				
Jan.	30.025	26.30	24.05	24.55
Feb.	29.868	25.75	23.50	24.00

\*Of dry content for material having a dry copper content in excess of 60%.

## Brass Ingot Makers' Scrap Copper Buying Prices

(Average Prices)  
(Cents per pound del. refinery for 60,000 lbs. of each grade)

	No. 1 Copper Scrap	No. 2 Copper Scrap	No. 1 Composition	Heavy Yellow Brass
1958				
Aver.	21.777	20.277	18.653	13.024
1959				
Jan.	25.29	23.79	19.70	13.982
Feb.	26.42	24.92	21.08	15.08
Mar.	28.79	27.29	22.85	16.85
Apr.	28.04	26.54	21.69	15.70
May	27.81	26.31	21.17	15.17
June	26.80	25.30	21.159	15.307
July	25.14	23.64	20.13	14.47
Aug.	25.762	24.262	21.286	14.81
Sept.	26.369	24.869	22.304	16.50
Oct.	27.595	25.405	22.19	16.048
Nov.	29.00	26.208	22.75	16.326
Dec.	28.50	25.993	22.50	16.00
Av.	27.120	25.377	21.567	15.52
1960				
Jan.	29.025	26.30	22.74	16.39
Feb.	28.408	25.75	22.00	16.00

METALS, MARCH, 1960

# Lead Statistics Reported by American Bureau of Metal Statistics

## Lead Refineries in U. S. A. and Outside U. S. A.

(Recoverable Lead Content in Tons of 2,000 Pounds)

### Combined U. S. A. and Outside U. S. A.

	REFINED PRODUCTION			DELIVERIES			STOCKS		
	Fig	Antimonial Lead Content	Total	Fig	Antimonial Lead Content	Total	Fig	Antimonial Lead Content	Total
1958 Total ..	1,485,282	106,383	1,591,665	1,307,390	102,697	1,410,087	.....	.....	.....
1959									
July ..	113,394	8,721	122,115	97,008	7,879	104,887	300,674	20,780	321,454
Aug. ..	105,433	7,094	112,527	114,715	11,517	126,232	290,832	16,357	307,189
Sept. ..	98,966	4,751	103,717	101,415	5,154	106,569	288,383	15,954	304,337
Oct. ..	101,159	8,583	109,742	112,940	8,808	121,748	276,602	15,729	292,331
Nov. ..	110,295	9,330	119,625	117,420	8,885	126,305	269,477	16,174	285,651
Dec. ..	121,374	8,444	129,818	118,582	4,107	122,689	272,269	20,511	292,780
Total ..	1,406,485	105,943	1,512,418	1,422,985	106,666	1,529,651	.....	.....	.....
1960									
Jan. ..	131,753	9,784	141,537	124,705	7,881	132,586	*281,530	*20,201	*301,731

### U. S. A.

1958 Total ..	473,208	46,985	520,193	589,528	49,893	639,421	.....	.....	.....
1959									
July ..	30,098	2,646	32,744	31,991	2,153	34,144	187,526	13,082	200,608
Aug. ..	23,404	2,091	25,495	55,094	7,397	62,491	174,959	7,979	182,938
Sept. ..	14,699	88	14,787	37,310	543	37,853	163,467	7,727	171,194
Oct. ..	18,096	697	18,793	35,110	2,290	37,400	167,969	8,150	176,119
Nov. ..	17,785	854	18,639	42,000	2,038	44,038	158,009	7,602	165,611
Dec. ..	27,969	2,052	30,021	41,502	1,745	39,757	154,307	11,552	165,859
Total ..	343,726	34,628	378,354	596,214	42,312	638,526	.....	.....	.....
1960									
Jan. ..	37,497	2,414	39,911	49,498	2,304	51,802	156,215	12,257	168,472

### Outside U. S. A.

1958 Total ..	1,012,074	59,398	1,071,472	717,862	52,804	770,666	.....	.....	.....
1959									
July ..	83,296	6,075	89,391	65,017	5,726	70,743	113,148	7,698	120,846
Aug. ..	82,029	5,003	87,032	59,621	4,120	63,741	115,873	8,378	120,846
Sept. ..	84,267	4,663	88,930	64,105	4,611	68,716	124,916	8,227	133,143
Oct. ..	83,063	7,886	90,949	77,830	6,518	84,348	108,633	7,579	116,212
Nov. ..	92,510	8,476	100,986	75,420	6,847	82,267	111,468	8,572	120,040
Dec. ..	93,405	6,392	99,797	77,080	5,852	82,932	117,962	8,959	126,921
Total ..	1,062,759	71,315	1,134,074	826,771	64,453	891,125	.....	.....	.....
1960									
Jan. ..	94,256	7,370	101,626	75,207	5,577	80,784	*125,315	*7,944	*133,259

\* Stocks on Jan. 1, 1960 are not comparable to those reported for Dec. 31, 1959 due to changes in the basis by reporting areas.

## Summary of Lead Statistics for United States

Recoverable Lead Content In Tons of 2000 Pounds	Raw Material at Smelter	Stocks (end of period)				Smelter Receipts			
		Base Bullion	At Refinery and Process	Refined Pig and Antimonial	Total	Primary U.S.A.	Outside U.S.A.	Scrap	Total
1958									
December ..	68,197	4,489	28,955	252,466	354,107	25,544	18,921	4,090	43,555
Total .....	.....	.....	.....	.....	.....	297,687	191,415	29,080	518,182
1959									
June .....	55,472	7,454	27,020	190,027	279,973	24,610	12,690	2,444	39,744
July .....	51,091	7,009	31,461	200,608	290,169	20,029	11,799	2,065	33,893
August .....	49,262	9,637	24,994	182,938	266,831	20,958	2,703	1,428	25,089
September ..	61,420	9,609	29,012	171,194	271,235	13,725	11,675	753	26,153
October .....	66,942	7,285	24,758	176,119	275,194	15,837	4,959	1,049	21,845
November ..	70,376	3,617	27,335	165,611	266,939	13,956	5,599	649	20,204
December ..	70,036	4,594	35,288	165,859	275,777	20,125	10,013	2,621	32,759
Total .....	.....	.....	.....	.....	.....	244,803	125,100	20,596	389,999
1960									
January ...	78,131	4,003	37,013	168,472	287,619	21,094	26,442	1,900	49,435
		Smelter Production	Fig	Refined Productions Antimonial	Total	Deliveries to U. S. Fabricators including imports from sources reporting to ABMS			
1958									
Total .....	.....	512,323	473,208	46,985	520,193	589,528	49,893		639,421
1959									
May .....	.....	38,722	34,483	4,359	38,842	78,398	4,598		82,996
June .....	.....	35,807	31,786	5,296	37,082	75,563	7,122		82,685
July .....	.....	37,328	30,098	2,646	32,744	31,991	2,153		34,144
August .....	.....	26,698	23,404	2,091	25,495	55,094	7,397		62,491
September ..	.....	13,995	14,699	88	14,787	37,310	543		37,853
October .....	.....	16,315	18,096	697	18,793	35,110	2,290		37,400
November ..	.....	16,770	17,785	854	18,639	42,000	2,038		44,038
December ..	.....	32,676	27,969	2,052	30,021	41,507	1,745		39,757
Total .....	.....	381,656	343,726	34,628	378,354	596,214	42,312		638,526
1960									
January .....	.....	40,593	37,497	2,414	39,911	49,498	2,304		51,802

# United States Lead Statistics of Primary Refineries

(American Bureau of Metal Statistics)  
(In tons of 2,000 lbs.)

	Stock At Beginning	Production Primary & Secondary	Total Supply	Stock At End	Domestic Shipments
1954 .....	81,152	551,618	632,770	92,719	475,551
1955 .....	28,855	547,153	639,872	31,089	531,339
1956 .....		613,293	644,382		529,484
1957 .....		604,353	645,534		463,060
1958 .....					
June .....	155,121	44,636	199,757	163,504	32,078
July .....	163,504	38,827	202,331	164,860	31,948
August .....	164,860	39,520	204,380	169,302	34,254
September .....	169,302	43,269	212,571	170,666	41,657
October .....	170,666	45,467	216,133	169,435	46,647
November .....	169,435	40,485	209,920	179,321	30,591
December .....	179,321	44,042	223,363	198,538	24,852
Total .....		522,956	614,554		380,359
1959 .....					
January .....	198,508	43,652	242,160	208,874	33,035
February .....	208,874	39,498	248,372	214,946	30,685
March .....	214,946	39,238	254,184	210,524	40,980
April .....	210,524	40,606	251,130	197,823	52,469
May .....	197,823	39,101	236,924	171,577	65,207
June .....	171,577	37,459	209,036	133,235	75,465
July .....	133,235	32,882	166,117	142,694	22,380
August .....	142,694	25,589	168,283	124,259	43,850
September .....	124,259	14,801	139,060	117,296	21,795
October .....	117,296	18,892	136,188	115,418	20,552
November .....	115,418	18,796	134,214	114,303	19,869
December .....	114,303	30,160	144,463	119,993	24,516
Total .....		380,674	579,182		450,983
1960 .....					
January .....	119,993	40,043	160,036	117,589	42,083

In instances where the figures are not in balance it is due to shipments to other than domestic consumers.

## Industrial Classification of Domestic Lead Shipments

(American Bureau of Metal Statistics)

(In tons of 2,000 lbs.)

	Cable	Amm.	Foil	Batt'y	Brass Making	Sun- dries	Job- bers	Unclass- ified
1956 .....								
Total .....	72,418	27,599	2,622	88,461	3,960	52,994	13,034	270,251
1957 .....								
Total .....	80,360	24,501	1,435	70,614	3,158	56,851	13,213	274,716
1958 .....								
Sept. ....	4,880	2,700	295	6,722	850	5,782	891	29,739
Oct. ....	3,671	3,300	205	5,973	881	4,203	847	21,367
Nov. ....	2,950	2,500	85	3,126	493	3,800	706	18,533
Dec. ....	2,499	1,350	36	2,820	270	2,607	529	13,997
Total .....	58,444	25,452	1,691	64,761	7,420	53,284	11,127	240,881
1959 .....								
Jan. ....	2,938	550	70	4,775	521	5,173	801	18,594
Feb. ....	2,899	1,750	70	5,124	90	1,643	888	11,368
Mar. ....	3,133	1,200	35	4,711	681	3,149	908	15,068
April ....	3,207	900	70	3,138	580	2,831	533	10,913
May ....	3,216	1,850	35	4,671	866	3,071	1,027	15,285
June ....	3,463	1,950	35	2,767	480	4,217	1,716	17,450
July ....	3,169	1,250	275	3,936	515	4,157	1,052	17,594
Aug. ....	3,481	2,415	70	4,992	400	6,399	100	16,397
Sept. ....	4,132	2,290	320	5,775	848	6,771	1,747	19,774
Oct. ....	3,243	2,450	...	4,548	285	6,210	1,641	28,270
Nov. ....	3,690	2,150	50	6,527	360	4,887	822	12,105
Dec. ....	2,267	2,100	50	6,216	215	2,578	652	10,774
Total .....	38,838	20,855	1,080	57,180	5,841	51,086	11,882	193,592
1960 .....								
Jan. ....	2,284	2,100	100	5,594	161	3,545	727	18,524
Feb. ....	2,988	1,225	50	5,254	735	2,706	931	16,796
Mar. ....	3,156	1,850	105	5,905	378	6,006	2,185	21,395
April ....	3,686	2,150	35	7,410	691	5,356	1,966	31,355
May ....	4,054	2,900	35	6,870	475	7,990	2,843	40,040
June ....	5,272	3,210	70	12,515	180	8,009	3,663	42,546
July ....	850	295	70	2,570	315	3,166	997	14,117
Aug. ....	3,268	1,150	205	3,073	410	6,640	1,921	27,183
Sept. ....	1,003	...	35	3,401	255	2,296	1,484	13,321
Oct. ....	700	500	35	4,299	228	2,676	1,021	11,093
Nov. ....	2,630	200	70	3,714	205	2,566	797	9,687
Dec. ....	2,133	950	70	3,479	475	2,628	738	14,043
Total .....	32,024	16,530	880	64,084	4,508	53,584	19,273	260,100
1960 .....								
Jan. ....	2,138	3,352	105	3,268	550	4,786	1,106	26,778

## Lead Prices at New York

(Common Grade)

Monthly Average Prices  
(Cents Per Pound)

	1957	1958	1959	1960
Jan. ....	16.00	13.00	12.619	12.00
Feb. ....	16.00	13.00	11.583	12.00
Mar. ....	16.00	13.00	11.42	...
Apr. ....	16.00	12.00	11.20	...
May ....	15.385	11.712	11.905	...
June ....	14.32	11.24	12.00	...
July ....	14.00	11.00	12.00	...
Aug. ....	14.00	10.85	12.286	...
Sept. ....	14.00	10.89	13.00	...
Oct. ....	13.704	12.673	13.00	...
Nov. ....	13.50	13.00	13.00	...
Dec. ....	13.00	13.00	12.523	...
Aver. ....	14.66	12.114	12.211	...

## Lead Sheet Prices

(To Jobbers, Full Sheets)

Monthly Average Prices  
(Cents Per Pound)

	1957	1958	1959	1960
Jan. ....	21.50	18.50	18.119	17.50
Feb. ....	21.50	18.50	17.083	17.50
Mar. ....	21.50	18.50	16.92	...
Apr. ....	21.50	17.50	16.70	...
May ....	20.885	17.212	17.405	...
June ....	19.82	16.74	17.50	...
July ....	19.82	16.50	17.50	...
Aug. ....	19.50	16.35	17.786	...
Sept. ....	19.50	16.39	18.50	...
Oct. ....	19.204	18.173	18.50	...
Nov. ....	19.00	18.50	18.50	...
Dec. ....	18.50	18.50	18.023	...

## Battery Shipments

The following table shows replacement battery shipments in the United States as compiled by the Business Information Division of Dun & Bradstreet, Inc., for the Association of American Battery Manufacturers:

(In thousands of units)

	1957	1958	1959	1960
Jan. ....	2,638	2,004	2,672	1,866
Feb. ....	1,961	1,803	1,791	...
Mar. ....	1,254	1,577	1,376	...
Apr. ....	1,178	1,242	1,437	...
May ....	1,605	1,454	1,593	...
June ....	1,878	1,773	2,118	...
July ....	2,469	2,101	2,556	...
Aug. ....	2,856	2,333	2,728	...
Sept. ....	2,688	2,704	2,889	...
Oct. ....	3,042	2,976	3,069	...
Nov. ....	2,359	2,262	2,799	...
Dec. ....	2,015	3,041	2,465	...
Total .....	25,943	25,270	27,493	...

METALS, MARCH, 1960



# Lead Stocks at Primary U. S. Smelters and Refiners

(American Bureau of Metal Statistics)  
(In tons of 2,000 lbs.)

	In ore and matte and in process at smelters	—In base bullion (lead content)— At smelters & refineries	In transit to refineries	In process at refineries	Refined pig lead	Antimo- nial lead	Total Stocks
1958							
Jan. 1..	79,362	11,019	2,779	23,154	79,741	11,857	207,912
Feb. 1..	79,738	11,510	3,678	24,535	88,517	12,689	220,667
Mar. 1..	79,588	9,546	3,670	22,834	107,213	12,309	235,250
Apr. 1..	83,185	10,692	2,187	21,766	116,610	12,144	246,584
May 1..	86,053	11,838	2,138	20,524	130,668	12,468	263,689
June 1..	79,482	11,059	2,010	20,188	141,967	13,154	267,860
July 1..	80,060	9,012	1,570	22,092	150,648	12,856	276,238
Aug. 1..	83,347	12,438	860	21,615	154,378	10,482	283,379
Sept. 1..	77,416	14,767	1,176	20,444	158,413	10,889	283,105
Oct. 1..	72,724	14,797	2,223	18,125	159,662	11,004	278,535
Nov. 1..	61,819	11,492	1,086	19,041	157,385	12,050	262,873
Dec. 1..	62,960	11,072	1,565	20,941	167,493	11,828	275,859
1959							
Jan. 1..	72,378	10,917	1,767	19,746	185,913	12,595	303,316
Feb. 1..	72,832	10,565	1,889	21,317	197,085	11,789	315,477
Mar. 1..	62,383	11,707	1,447	21,479	202,835	12,111	311,962
Apr. 1..	68,433	14,352	350	20,575	198,459	12,065	314,234
May 1..	64,538	12,373	624	20,507	184,468	13,355	295,865
June 1..	55,223	12,239	766	20,391	157,981	13,596	260,196
July 1..	58,451	13,270	943	19,468	120,914	12,321	225,367
Aug. 1..	53,115	18,379	158	18,021	129,551	13,143	232,367
Sept. 1..	50,007	17,389	....	15,638	116,344	7,915	207,293
Oct. 1..	61,910	17,925	....	14,932	109,527	7,769	212,063
Nov. 1..	69,429	14,800	....	14,919	107,849	7,569	214,566
Dec. 1..	70,837	12,919	....	15,708	106,678	7,625	213,767
1960							
Jan. 1..	73,831	16,955	3,085	16,914	108,002	11,991	230,328
Feb. 1..	78,315	17,139	1,425	19,003	105,292	12,297	233,471

## Receipts of Lead in Ore and Scrap By U. S. Smelters (a)

(American Bureau of Metal Statistics)

(In tons of 2,000 lbs.)

	—Receipts of lead in ore—			Receipts of lead in scrap etc. (b)	Total receipts in ore, & scrap
	United States	Foreign	Total		
1953 Total	351,183	155,788	506,971	42,994	549,965
1954 Total	336,291	158,081	494,372	49,864	544,236
1955 Total	341,595	172,966	514,561	42,996	557,557
1956 Total	368,499	192,318	560,817	55,925	616,792
1957					
December	27,105	26,610	53,715	3,791	57,506
Total	356,409	206,901	563,310	42,537	605,847
1958					
January	25,537	22,097	47,634	3,507	51,141
February	23,789	16,400	40,189	2,184	42,373
March	21,735	20,038	41,773	3,154	44,927
April	25,104	15,821	40,925	1,913	42,838
May	27,427	10,228	37,655	1,867	39,522
June	28,577	13,811	42,388	1,366	43,754
July	22,289	19,692	41,891	1,615	43,506
August	22,984	13,043	36,027	1,252	37,279
September	20,654	14,576	35,230	1,765	36,995
October	18,678	9,093	27,771	3,577	31,348
November	24,024	14,541	38,565	3,933	42,498
December	24,366	18,804	43,170	3,982	47,152
Total	285,164	188,144	473,308	30,115	503,423
1959					
January	24,304	19,449	43,753	3,138	46,891
February	22,253	8,660	30,913	1,747	32,660
March	21,897	21,012	42,909	1,328	44,237
April	22,339	10,998	33,337	1,196	34,533
May	21,645	5,202	26,847	1,930	28,777
June	23,634	12,368	36,002	2,431	38,433
July	19,165	11,695	30,860	2,199	33,059
August	19,971	2,821	22,792	1,009	23,801
September	13,591	3,465	17,056	32	17,088
October	14,740	3,648	18,388	133	18,521
November	13,808	4,582	18,390	133	18,523
December	21,208	20,977	42,185	5,269	47,454
Total	238,555	124,877	363,432	20,545	383,977
1960					
January	20,531	26,307	46,838	1,762	48,600

(a) Receipts of lead in ore are computed on the basis of recoverable lead. Owing to the estimational factor in this, which is probably on the low side, and also to the possibility that some lead receipts may escape attention, these monthly totals probably understate the actual production of pig lead. (b) Inclusive only of scrap smelted in connection with ore, plus some scrap received by primary refiners.

METALS, MARCH, 1960

## N. Y. Lead Price Changes

(Effective Date)

1951		Apr. 12....14.00
Oct. 2..**19.00		June 2....14.25
1952		June 15....14.00
Apr. 29....18.00		Aug. 25....14.25
May 2....17.00		Sept. 7....14.50
May 12....15.00		Sept. 15....14.75
June 23....15.50		Oct. 4....14.875
June 24....16.00		Oct. 5....15.00
Oct. 7....15.00		1955
Oct. 14....14.00		Sept. 23....15.00-
Oct. 22....13.50		15.50
Nov. 3....14.00		Sept. 26....15.50
Nov. 10....14.25		Dec. 29....16.00
Nov. 11....14.50		1956
Nov. 20....14.25		Jan. 4....16.50
Nov. 24....14.00		Jan. 13....16.00
Dec. 22....14.25		1957
Dec. 29....14.50		May 9....15.50
Dec. 31....14.75		May 16....15.00
1953		June 11....14.00
Jan. 7....14.50		Oct. 14....13.50
Jan. 12....14.00		Dec. 2....13.00
Feb. 2....13.50		1958
Mar. 4....13.50		Apr. 1....12.00
Mar. 10....13.50		May 14....11.50
Apr. 7....13.00		June 3....11.00
Apr. 16....12.50		June 18....11.50
Apr. 21....12.00		July 1....11.00
Apr. 29....12.50		Aug. 13....10.75
May 18....12.75		Sept. 17....11.00
May 19....13.00		Sept. 30....11.50
May 26....13.15		Oct. 2....12.00
June 11....13.50		Oct. 8....12.50
July 20....13.75		Oct. 14....13.00
July 23....14.00		1959
Sept. 16....13.50		Jan. 21....12.00
1954		Feb. 11....11.50
Jan. 18....13.00		Feb. 24....11.00
Feb. 18....12.50		Mar. 5....11.50
Mar. 9....12.75		April 1....11.00
Mar. 10....13.00		April 20....11.50
Mar. 26....13.25		May 7....12.00
Mar. 29....13.50		Aug. 24....13.00
Apr. 1....13.75		Dec. 14....12.50
		Dec. 21....12.00

\*\*OPS Ceiling.

## Antimonial Lead Stocks at Primary Refineries

(A.B.M.S.)

	(In tons of 2,000 pounds)		
End of	1957	1958	1959
Jan. 10,487	12,689	11,789	12,297
Feb. 10,220	12,309	12,111	....
Mar. 9,794	12,144	12,065	....
Apr. 9,391	12,468	13,355	....
May 9,799	13,154	13,596	....
June 9,503	12,856	12,321	....
July 8,661	10,482	13,143	....
Aug. 9,553	10,889	7,915	....
Sept. 10,215	11,004	7,769	....
Oct. 11,581	12,050	7,569	....
Nov. 11,119	11,828	7,625	....
Dec. 11,857	12,595	11,991	....

## Antimonial Lead Production by Primary Refineries

(A.B.M.S.)

	(In tons of 2,000 pounds)		
End of	1957	1958	1959
Jan. 5,114	3,743	3,541	2,538
Feb. 5,468	3,657	4,415	....
Mar. 5,091	3,527	4,098	....
Apr. 6,183	3,655	5,533	....
May 6,978	4,827	4,618	....
June 4,466	3,992	5,671	....
July 5,372	2,775	2,784	....
Aug. 7,967	5,244	2,185	....
Sept. 7,574	4,761	1,02	....
Oct. 6,148	5,849	886	....
Nov. 3,791	3,913	1,324	....
Dec. 3,290	4,539	2,656	....

Total 67,541 50,482 37,813

## Lead Imports and Exports By Principal Countries

(A.B.M.S.)

Reported in pigs, bars, etc.; metric tons except where otherwise noted.

	1959		
	Oct.	Nov.	Dec.
<b>IMPORTS</b>			
U. S.* (s.t.)	18,762	20,647	11,866
Canada (s.t.)	500	...	...
Belgium	1,257	...	...
Denmark	2,679	289	...
France	5,070	3,129	5,537
Germany, W.†	7,383	6,199	...
Italy**	1,393	...	...
Netherlands	3,737	2,676	4,073
Norway	1,176	...	...
Sweden	1,037	452	...
Switzerland	936	1,419	2,151
U. K. (l.t.)	10,903	7,551	18,487
India† (l.t.)	1,613	...	...
<b>EXPORTS</b>			
U. S.* (s.t.)	39	45	82
Canada (s.t.)	4,884	6,785	10,218
Belgium	4,980	...	...
Denmark	1,177	622	...
France	200	726	746
Germany, W.†	1,605	1,935	...
Netherlands	491	560	381
Sweden	3,468	1,600	...
Switzerland	2	20	27
Northern Rhodesia† (l.t.)	769	598	...
Australia (l.t.)	12,136	14,212	...

\* Refined.

\*\* Includes lead alloys.

† British Bureau of Non-Ferrous Metal Statistics.

‡ Includes scrap.

## French Lead Imports

(A. B. M. S.)

	(In metric tons)		
	Nov.	Dec.	Jan.
Ore (gross weight)	3,459	6,580	5,677
Algeria	450	...	714
Morocco	2,509	5,580	4,963
Fr. Eq. Africa	500	1,000	...
Pig lead	3,129	5,437	3,200
Belgium	1,084	1,151	682
Germany (W.)	...	37	44
Spain	...	...	100
Algeria	...	...	308
Morocco	1,340	2,437	1,304
Tunisia	705	1,808	482
Australia	705	1,808	482
Other countries	...	4	...
Antimonial lead	53	...	102

## U. K. Lead Imports

(British Bureau of Non-Ferrous Metal Statistics)

(In tons of 2,240 lbs.)

	1959		1960
	Nov.	Dec.	Jan.
(Gross Weight)			
Lead and			
lead alloys ...	7,551	18,487	13,062
Australia .....	3,423	14,519	7,955
Canada .....	2,379	3,157	2,816
Yugoslavia ....	400	100	150
Peru .....	100	100	100
Other countries	1,249	611	2,041

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## U. S. Lead Consumption

(Bureau of Mines — In Short Tons)

	1958	1959	1959 Dec.
<b>Metal Products:</b>			
Ammunition	40,215	45,331	4,020
Bearing metals	18,980	22,559	1,804
Brass and bronze	20,379	23,745	1,816
Cable covering	74,981	61,833	5,816
Calking lead	70,807	76,257	4,922
Casting metals	8,674	7,766	669
Collapsible tubes	8,432	8,611	555
Foil	4,586	3,709	227
Pipes, traps and bends	23,044	22,827	1,923
Sheet lead	25,104	27,153	2,168
Solder	59,653	65,760	4,564
Storage battery grids, posts, etc.	159,795	182,394	15,038
Storage battery oxides	152,930	178,720	15,182
Terne metal	1,227	1,518	102
Type metal	26,740	26,246	2,173
<b>Total</b>	<b>695,547</b>	<b>754,429</b>	<b>60,980</b>

<b>Pigments:</b>			
White lead	13,589	11,078	691
Red lead and litharge	64,892	81,935	6,625
Pigment colors	11,853	13,827	1,029
Other*	5,567	4,327	180
<b>Total</b>	<b>95,901</b>	<b>111,212</b>	<b>8,525</b>

<b>Chemicals:</b>			
Tetraethyl lead	159,412	160,020	11,234
Misc. chemicals	3,233	3,847	294
<b>Total</b>	<b>162,645</b>	<b>163,867</b>	<b>11,528</b>

<b>Miscellaneous uses:</b>			
Annealing	5,114	4,265	485
Galvanizing	1,226	979	140
Lead plating	438	158	5
Weights and ballast	7,577	6,978	423
<b>Total</b>	<b>14,355</b>	<b>12,380</b>	<b>1,053</b>
Other uses unclassified	17,939	17,189	1,603
<b>Total reported†</b>	<b>986,387</b>	<b>1,059,077</b>	<b>83,689</b>

Estimated unreported consumption	24,000	2,090	
<b>Grand total†</b>	<b>986,387</b>	<b>1,083,100</b>	<b>85,700</b>

<b>Daily average‡</b>	<b>2,702</b>	<b>2,967</b>	<b>2,765</b>
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\* Includes lead content of leaded zinc oxide production.

† Includes lead content of scrap used directly in fabricated products.

‡ Based on number of days in month without adjustment for Sundays and holidays.

## Consumers' Lead Stocks, Receipts and Consumption

(Bureau of Mines — In Short Tons)

	Stocks Nov. 31, 1959	Net Receipts in Dec.	Consumed in Dec.	Stocks Dec. 31, 1959
Soft lead	85,490	46,689	54,596	77,583
Antimonial lead	37,061	22,526	21,311	38,276
Lead in alloys	6,516	2,811	3,158	6,169
Lead in copper-base scrap	1,103	1,358	1,378	1,083
<b>Total</b>	<b>130,170</b>	<b>73,384</b>	<b>*80,443</b>	<b>123,111</b>

\* Excludes 3,087 tons of lead which went directly from scrap to fabricated products and 159 tons of lead contained in leaded zinc oxide production.

## Consumption of Lead by Class of Product

(Bureau of Mines — In Short Tons)

DECEMBER

	Soft lead	Antimonial lead	Lead in alloys	Lead in copper-base scrap	Total
Metal products	32,485	20,931	3,139	1,378	57,933
Pigments	8,356	10	...	...	8,366
Chemicals	11,527	1	...	...	11,528
Miscellaneous	730	323	...	...	1,053
Unclassified	1,498	46	19	...	1,563
<b>Total</b>	<b>54,596</b>	<b>21,311</b>	<b>3,158</b>	<b>1,378</b>	<b>*80,443</b>

\* Excludes 3,087 tons of lead which went directly from scrap to fabricated products and 159 tons of lead contained in leaded zinc oxide production.

## U. K. Lead Consumption

(British Bureau of Non-Ferrous Metal Statistics)

(In tons of 2,240 pounds)

	1957	1958	1959
Jan.	29,657	29,607	28,872
Feb.	29,219	27,855	25,968
Mar.	29,144	29,713	26,691
Apr.	27,246	26,230	29,252
May	31,574	28,839	27,280
June	28,607	28,624	30,099
July	27,604	27,201	26,851
Aug.	24,756	21,726	25,358
Sept.	29,519	28,829	30,255
Oct.	32,486	31,356	32,926
Nov.	31,060	28,786	32,579
Dec.	26,530	27,154	31,772
<b>Total</b>	<b>347,699</b>	<b>335,920</b>	<b>345,903</b>

## American Antimony

Monthly Average Prices

In bulk, f.o.b. Laredo  
(Cents per lb. in ton lots)

	1957	1958	1959	1960
Jan.	33.00	33.00	29.00	29.00
Feb.	33.00	30.818	29.00	29.00
Mar.	33.00	29.00	29.00	...
Apr.	33.00	29.00	29.00	...
May	33.00	29.00	29.00	...
June	33.00	29.00	29.00	...
July	33.00	29.00	29.00	...
Aug.	33.00	29.00	29.00	...
Sept.	33.00	29.00	29.00	...
Oct.	33.00	29.00	29.00	...
Nov.	33.00	29.00	29.00	...
Dec.	33.00	29.00	29.00	...
<b>Aver.</b>	<b>33.00</b>	<b>29.485</b>	<b>29.00</b>	...



## Domestic Zinc Statistics

### American Zinc Institute

Commencing with January, 1948, all regularly operating U. S. primary and secondary smelters are included in this report. Production from foreign ores also is included.  
(Tons of 2,000 lbs.)

	Stock Begin- ning	Pro- duction	Domestic Shipments	Export & Drawback	Gov't Acc't	Total	Stock at End	Daily Avg. Prod.
1950 Total	94,221	910,354	849,246	15,189	128,256	996,691	8,884	2,494
1951 Total	8,884	77,653	836,800	42,007	39,949	918,816	21,901	2,553
1952 Total	21,901	961,430	803,343	56,202	36,626	896,171	87,160	2,627
1953 Total	87,160	80,119	66,945	4,633	3,052	74,681	180,843	2,661
1954 Total	180,843	80,933	68,238	1,361	3,528	78,126	124,277	2,379
1955 Total	40,979	1,031,018	1,007,619	19,497	87,200	1,114,316	40,979	2,825
1956 Total	40,979	85,918	83,968	1,625	7,267	92,860	68,622	2,904
1957 Total	1,062,954	88,850	869,270	9,027	157,014	1,035,311	68,622	2,904
1958 Total	1,067,450	1,067,450	765,132	15,460	179,466	815,567	...	...
1959	...	...	...	...	...	...	...	...
January	180,346	68,354	49,072	446	9,993	59,511	189,189	2,441
February	189,189	72,274	48,948	111	8,763	57,822	203,641	2,331
March	203,641	70,214	46,598	159	5,927	52,684	221,171	2,340
April	221,171	71,018	51,390	129	...	51,519	240,670	2,291
May	240,670	66,967	54,487	171	...	54,658	252,979	2,232
June	252,979	65,119	60,312	55	...	60,187	257,911	2,101
July	257,911	62,927	63,718	591	...	69,309	251,529	2,030
August	251,529	63,705	76,905	213	...	77,118	238,116	2,124
September	238,116	65,304	93,018	226	...	93,224	210,176	2,107
October	210,176	65,174	83,394	212	...	83,606	191,744	2,172
November	191,744	75,503	76,862	148	...	77,010	190,237	2,432
December	191,744	75,503	76,862	148	...	77,010	190,237	2,432
1959	...	...	...	...	...	...	...	...
January	190,237	76,481	70,770	171	...	70,941	195,777	2,467
February	195,777	71,174	65,641	849	...	66,490	200,461	2,542
March	200,461	70,918	73,814	482	...	74,296	206,083	2,578
April	206,083	76,393	78,358	255	...	78,613	203,863	2,546
May	203,863	77,489	85,073	275	...	85,348	196,004	2,500
June	196,004	75,544	99,858*	204	2,100	102,162	169,386	2,518
July	169,386	73,101	59,460	94	900	60,454	182,033	2,358
August	182,033	69,768	58,918	864	...	59,782	192,019	2,251
September	192,019	62,202	87,971	3,214	...	81,185	193,036	2,075
October	193,036	63,938	68,910	1,813	...	65,723	191,251	2,063
November	191,251	62,346	74,596	2,844	...	77,440	176,157	2,078
December	176,157	69,666	84,498	6,906	...	91,404	154,419	2,247
1959 Total	...	858,020	872,867	17,971	3,000	893,838	...	...
1960	...	...	...	...	...	...	...	...
January	154,419	73,326	79,325	3,949	...	83,274	144,471	2,365
February	144,471	74,738	78,029	4,118	...	82,147	137,062	2,577

\* Inflated by abnormal shipments on consignment of approximately 9,000 tons.

## U. S. Consumption of Slab Zinc

### Bureau of Mines

#### By Industries (Short Tons)

	Galvan- izers	Die Casters	Brass products	Rolled zinc	Zinc oxide & other	Total
1951 Total	386,373	266,442	141,456	64,000	28,738	887,009
1952 Total	375,563	236,022	155,311	51,508	30,885	849,289
1953 Total	403,182	305,246	177,801	53,784	38,037	977,636
1954 Total	398,599	286,817	107,293	45,979	33,342	876,130
1955 Total	439,694	404,790	144,816	50,363	39,302	1,081,468
1956 Total	421,218	352,451	122,395	45,382	36,251	983,097
1957	...	...	...	...	...	...
November	28,025	31,396	10,024	2,843	1,255	76,595
December	24,383	27,927	7,854	2,679	1,427	67,421
Total	355,796	358,543	111,114	39,544	20,486	924,063
1958	...	...	...	...	...	...
January	26,861	26,348	9,115	3,183	1,664	69,295
February	24,598	22,629	7,279	2,716	1,316	60,347
March	27,171	19,045	6,871	3,138	1,724	59,978
April	27,464	17,829	6,392	3,259	1,295	58,432
May	30,935	18,316	6,597	2,896	2,263	61,907
June	34,377	21,497	6,643	2,961	2,212	67,690
July	30,877	17,387	6,275	2,848	1,920	60,007
August	34,663	20,382	8,358	3,379	1,901	70,033
September	34,048	25,188	9,624	3,458	770	74,122
October	36,513	27,682	11,753	3,845	881	81,919
November	31,658	27,311	10,067	3,276	826	74,302
December	31,746	29,926	10,529	3,681	1,018	78,082
Total	370,441	273,540	92,906	38,690	16,772	737,942
1959	...	...	...	...	...	...
January	31,729	29,110	11,172	3,874	2,521	79,506
February	31,672	26,448	11,508	3,418	2,864	77,010
March	37,287	29,286	12,889	3,629	3,203	87,394
April	38,541	31,262	12,304	3,715	3,223	90,145
May	38,788	29,169	12,015	3,316	3,305	88,093
June	40,531	36,269	10,764	3,801	3,120	95,985
July	23,700	28,120	7,558	2,509	2,042	65,429
August	13,763	29,803	10,064	3,160	2,161	60,451
September	13,181	31,463	10,842	3,322	2,237	62,545
October	13,582	35,473	10,543	3,272	2,487	66,857
November	25,456	29,351	8,858	3,411	2,523	71,099
December	38,418	34,576	8,704	3,152	2,936	89,286
Total	346,648	370,330	127,221	40,759	22,622	933,800

METALS, MARCH, 1960

## Prime Western Zinc Prices

(East St. Louis, f.o.b.)

	(Cents Per Pound) (In tons of 2,240 pounds)			
	1957	1958	1959	1960
Jan.	13.50	10.00	11.50	12.90
Feb.	13.50	10.00	11.411	13.00
Mar.	13.50	10.00	11.00	...
Apr.	13.50	10.00	11.00	...
May	11.933	10.00	11.00	...
June	10.84	10.00	11.00	...
July	10.00	10.00	11.00	...
Aug.	10.00	10.00	11.00	...
Sept.	10.00	10.00	11.391	...
Oct.	10.00	10.865	12.233	...
Nov.	10.00	11.386	12.50	...
Dec.	10.00	11.50	12.50	...
Aver.	11.40	10.313	11.46	...

## High Grade Zinc Prices

	(Delivered) N. Y. Monthly Averages (Cents Per Pound)			
	1957	1958	1959	1960
Jan.	14.85	11.35	12.50	14.244
Feb.	14.85	11.35	12.411	14.25
Mar.	14.85	11.35	12.00	...
Apr.	14.85	11.084	12.00	...
May	13.283	11.00	12.00	...
June	12.19	11.00	12.00	...
July	11.35	11.00	12.00	...
Aug.	11.35	11.00	12.006	...
Sept.	11.35	11.00	12.625	...
Oct.	11.35	11.865	13.483	...
Nov.	11.35	12.386	13.75	...
Dec.	11.35	12.50	13.75	...
Aver.	12.75	11.407	12.544	...

## U. K. Zinc Consumption

(British Bureau of Non-Ferrous Metal Statistics)

(In Tons of 2,240 Pounds)

	1957	1958	1959
Jan.	28,485	27,473	27,849
Feb.	26,276	24,551	25,676
Mar.	27,049	26,967	27,243
Apr.	24,247	24,984	28,006
May	29,589	24,579	26,167
June	25,202	25,587	30,221
July	25,934	23,794	26,318
Aug.	20,381	19,076	21,566
Sept.	27,792	26,747	31,270
Oct.	29,552	29,838	30,686
Nov.	26,705	26,432	29,221
Dec.	24,419	26,042	30,829
Total	315,631	306,070	...

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## Mine Production of Zinc in United States

(U. S. Bureau of Mines)

	(In short tons)			
	Eastern States	Central States	Western States	Total U.S.*
1954				
Total	166,487	63,100	234,942	464,539
1955				
Total	163,230	73,630	277,811	514,671
1956				
Total	175,310	61,080	301,253	537,643
1957				
Total	196,877	29,506	290,151	520,128
1958				
Sept.	14,857	—	15,279	29,865
Oct.	16,197	—	16,074	32,271
Nov.	15,393	—	16,998	32,391
Dec.	15,064	—	16,939	32,003
Total	180,373	10,050	221,582	412,005
1959				
Jan.	16,446	—	19,114	35,560
Feb.	16,881	—	19,292	36,104
Mar.	18,266	—	18,817	37,183
Apr.	19,198	—	19,132	38,330
May	19,150	—	19,201	38,351
June	18,217	—	18,447	36,664
July	13,158	—	18,656	31,814
Aug.	14,410	140	16,661	31,211
Sept.	14,226	154	15,026	29,406
Oct.	15,608	200	15,979	31,487
Nov.	18,285	200	15,698	34,183
Dec.	19,609	106	15,757	35,472
Total	204,384	800	211,781	416,965
1960				
Jan.	20,962	226	15,795	36,983

\*Includes Alaskan output in some months.

## Mine Production of Lead in United States

(U. S. Bureau of Mines)

	(In short tons)			
	Eastern States	Central States	Western States	Total U.S.*
1953				
Ttl.	9,970	136,650	188,776	335,412
1954				
Ttl.	8,608	138,940	169,804	317,352
1955				
Ttl.	10,379	145,640	177,409	333,409
1956				
Ttl.	11,395	141,900	195,034	348,329
1957				
Ttl.	9,300	135,800	188,392	333,493
1958				
Oct.	517	9,290	11,467	21,274
Nov.	606	10,500	11,823	22,929
Dec.	565	9,600	11,699	21,865
Ttl.	6,439	118,114	142,824	267,377
1959				
Jan.	549	9,748	12,239	23,536
Feb.	611	8,457	12,314	21,382
Mar.	601	7,943	12,426	20,970
Apr.	454	8,103	12,684	21,241
May	412	7,253	12,509	20,174
June	458	8,185	12,764	21,407
July	369	8,190	11,010	19,569
Aug.	353	9,762	11,735	21,850
Sept.	510	9,698	10,328	20,536
Oct.	548	10,012	10,755	21,315
Nov.	620	9,350	10,954	20,924
Dec.	550	8,734	10,572	19,856
Ttl.	6,535	105,435	141,290	253,260
1960				
Jan.	535	9,035	11,235	20,805

## Mine Production of Gold in United States

(U. S. Bureau of Mines)  
(In fine ounces)

	Eastern States	Western States	Alaska*	Total
1955				
Ttl.	2,026	1,634,625	247,535	1,884,186
1956				
Ttl.	1,998	1,607,930	204,300	1,814,228
1957				
Ttl.	2,174	1,556,450	210,000	1,768,624
1958				
Oct.	186	135,882	42,467	178,535
Nov.	—	—	—	—
Dec.	—	—	10,373	144,757
1959				
Jan.	—	—	—	143,374
Feb.	—	—	—	128,932
Mar.	—	—	537	135,934
Apr.	—	—	2,956	141,777
May	—	—	9,719	157,338
June	—	—	23,792	163,057
July	—	—	33,324	171,749
Aug.	—	—	37,534	146,907
Sept.	—	—	30,886	114,364
Oct.	—	—	29,349	117,314
Nov.	—	—	2,903	91,175
Dec.	—	—	17,294	106,525
Ttl.	—	—	188,294	1,618,446
1960				
Jan.	—	—	2,460	—

\* Alaska totals based on mint and smelter receipts.

## U. S. Silver Production\*

(A.B.M.S.)

	(In thousands of ounces; commercial bars, 0.999 fine, and other refined forms)		
	Dom.†	For.	Total
1954 Total	38,059	39,422	77,481
1955 Total	33,101	32,780	65,881
1956 Total	38,157	40,160	78,317
1957 Total	36,279	34,932	71,211
1958			
July	2,127	2,494	4,621
August	2,651	3,235	5,886
September	2,614	3,165	5,779
October	3,831	2,750	6,581
November	2,505	3,283	5,788
December	3,275	3,652	7,236
Total	35,691	37,572	73,263
1959			
January	2,330	4,460	6,790
February	2,827	2,913	5,740
March	2,823	4,087	6,910
April	2,946	3,233	6,179
May	2,641	3,484	6,125
June	3,219	3,231	6,450
July	2,609	3,284	5,893
August	1,472	1,229	2,701
September	390	577	967
October	510	610	1,120
November	635	602	1,237
December	756	4,311	5,067
Total	23,158	32,021	55,179

\* The separation between silver of foreign and domestic origin on the basis of refined bars and other refined forms is only approximate.  
† Includes purchases of crude silver by the U. S. Mint.

## Mine Production of Recoverable Silver in United States

(U. S. Bureau of Mines)

	(In Fine Ounces)				
	Eastern States	Missouri	Western States	Alaska*	Total
1957 Total	610,386	240,000	37,018,950	26,000	37,895,336
1958					
November	†	16,000	†	3,175	2,720,577
December	†	13,730	†	675	2,682,299
Total	†	210,000	†	28,000	33,022,225
1959					
January	†	21,000	†	—	2,868,648
February	†	18,060	†	—	2,908,630
March	†	17,200	†	67	2,982,254
April	†	17,600	†	421	2,963,775
May	†	15,900	†	1,201	3,046,085
June	†	17,900	†	2,953	2,926,886
July	†	8,900	†	4,149	2,905,320
August	†	10,600	†	5,523	2,291,540
September	†	10,400	†	3,224	1,794,029
October	†	10,900	†	3,793	1,952,629
November	†	10,400	†	469	1,874,624
December	†	10,140	†	2,334	1,825,198
Total	†	169,000	†	24,134	30,349,334
1960					
January	†	18,300	†	321	1,962,523

† Figures not available.

\* Alaska totals based on mint and smelter receipts.

## Production of Primary Aluminum in the U. S.

(U. S. Bureau of Mines)

	(In short tons)							
	1953	1954	1955	1956	1957	1958	1959	1960
Jan.	89,895	116,247	128,203	140,394	147,029	139,910	156,708	164,027
Feb.	92,649	110,483	116,236	132,763	119,059	121,980	142,116	—
Mar.	104,460	122,339	130,272	145,895	135,706	134,019	157,189	—
Apr.	102,071	120,434	126,394	144,726	139,152	128,559	155,213	—
May	105,464	125,138	131,128	150,800	145,174	129,083	163,857	—
June	104,152	120,758	127,634	145,726	138,007	115,325	167,323	—
July	109,285	126,161	132,669	151,624	142,157	118,811	179,594	—
Aug.	110,545	125,296	133,551	152,406	143,449	125,416	172,817	—
Sept.	109,333	120,332	130,606	132,316	129,278	124,713	168,205	—
Oct.	108,219	125,089	134,655	149,125	133,759	139,847	173,762	—
Nov.	105,636	121,252	133,689	145,081	135,024	140,962	153,666	—
Dec.	110,291	127,056	140,748	148,391	140,033	153,301	162,996	—
Ttl.	1,252,013	1,460,565	1,565,721	1,679,427	1,647,710	1,655,556	1,953,019	—

## Average Silver Prices

	(Cents per fine ounce)			
	1957	1958	1959	1960
Jan.	91.375	89.449	90.19	91.375
Feb.	91.375	88.625	90.444	91.375
Mar.	91.375	88.625	91.351	—
Apr.	91.375	88.625	91.375	—
May	91.307	88.625	91.375	—
June	90.456	88.625	91.375	—
July	90.31	88.625	91.375	—
Aug.	90.909	88.625	91.399	—
Sept.	90.602	88.673	91.399	—
Oct.	90.625	89.966	91.375	—
Nov.	90.382	90.125	91.375	—
Dec.	89.80	89.932	91.375	—
Aver.	90.824	89.043	91.226	—

Note — The averages are based on the price of refined bullion imported on or after August 31, 1943.

METALS, MARCH, 1960

## U. S. Lead Imports

(A.B.M.S.) (Bureau of the Census)

(In tons of 2,000 lbs.)			
	Nov. 1959	Dec. 1959	Jan. 1960
Ore, matte, etc. (cont.)	13,088	12,312	15,157
Canada	2,285	3,141	3,474
Mexico	.....	9	217
Honduras	.....	850	600
Argentina	53	.....	.....
Bolivia	397	1,223	474
Colombia	210	200	.....
Peru	3,622	4,274	2,619
Union of S. Africa	3,955	.....	4,475
Australia	2,508	2,615	3,200
Philippines	12	.....	49
Korea	25	.....	.....
Other countries	21	.....	49
Base bullion (content)	.....	.....	12
Peru	.....	.....	12
Pigs and bars	20,647	11,866	19,854
Canada	1,742	3,906	1,957
Mexico	4,401	2,056	7,653
Peru	2,149	2,463	1,211
Belgium	.....	.....	323
Denmark	.....	168	.....
Spain	.....	733	.....
Sweden	560	1,120	.....
Yugoslavia	5,174	100	.....
Rhodesia & Nyasaland	703	349	.....
Australia	5,918	971	8,710

### Total Imports:

Ore, base bullion, ref.	33,735	24,178	35,023
Lead scrap, dross, etc. (content)	257	597	385
Antimonial lead & typemetal	1,128	915	272
Lead content thereof	1,081	861	224

## U. S. Copper Imports

(A.B.M.S.) (Bureau of the Census)

(In tons of 2,000 lbs.)			
	Nov. 1959	Dec. 1959	Jan. 1960
Ore, matte & regulus (content)	3,381	5,226	7,246
Canada	24	896	3,710
Cuba	.....	2,074	.....
Argentina	106	.....	7
Bolivia	.....	236	13
Chile	985	1,766	1,140
Peru	670	121	1,059
Philippines	1	.....	.....
Union of S. Africa	1,540	.....	1,030
Australia	42	131	285
Other countries	13	2	2
Blister copper (cont.)	20,417	34,528	21,597
Mexico	.....	1,032	.....
Chile	17,639	28,370	17,925
Peru	.....	1,243	1,765
Union of S. Africa	2,774	3,883	1,220
Turkey	.....	.....	547
Other countries	4	.....	50
Refined cathodes and shapes	43,713	40,200	34,120
Canada	17,508	17,473	12,556
Mexico	1,763	1,305	551
Chile	2,000	2,910	2,235
Peru	1,550	2,319	3,078
Belgium	1,784	2,579	1,384
Germany (West)	9,194	6,168	4,521
Sweden	2,063	142	1,717
United Kingdom	1,684	3,088	391
Belgian Congo	56	340	196
Rhodesia & Nyasaland	4,916	3,493	1,610
Union of S. Africa	840	112	.....
Other countries	365	301	*5,881

### Total Imports:

Crude and refined	67,511	79,954	62,873
Old and scrap (cont.)	1,006	514	704
Composition metal (content)	210	29	96
Brass scrap and old (cu. content)	258	156	128

\* Includes 150 tons from Norway, 888 from Finland, 2,756 from Spain and 1,001 from Australia.

## U. S. Zinc Imports

(A.B.M.S.) (Bureau of the Census)

(In tons of 2,000 lbs.)			
	Nov. 1959	Dec. 1959	Jan. 1960
Zinc ore (content)	37,847	30,278	36,012
Canada	10,864	11,153	10,709
Mexico	14,358	7,093	14,324
Cuba	.....	78	.....
Honduras	.....	68	775
Bolivia	618	98	15
Colombia	42	11	.....
Peru	8,472	5,847	5,255
Italy	.....	5,335	.....
Spain	3,002	.....	3,870
Union of S. Africa	.....	499	.....
Australia	378	595	438
Philippines	2	.....	3
Other countries	111	.....	124
Zinc blocks, pigs, etc.	11,045	10,736	8,955
Canada	8,224	6,068	6,386
Mexico	.....	353	384
Peru	850	802	351
Austria	220	.....	.....
Belgium	.....	84	552
Italy	422	783	779
Yugoslavia	.....	441	110
Belgian Congo	461	2,205	55
Rhodesia & Nyasaland	457	.....	338
Australia	411	.....	.....

### Total Imports:

Zinc ore, blocks, pigs	48,892	41,014	44,967
Dross and skimmings	66	120	42
Old and worn out	57	.....	12

## U. S. Copper Exports

(A.B.M.S.) (Bureau of the Census)

(In tons of 2,000 lbs.)			
	Nov. 1959	Dec. 1959	Jan. 1960
Ore, concentrates, matte and other unrefined (content)	231	95	53
Refined ingots, bars, etc.*	2,309	5,146	11,337
Canada	202	221	221
Brazil	22	.....	397
Belgium	55	51	25
Denmark	.....	112	.....
France	121	335	1,746
Germany (West)	1,229	2,271	3,491
Italy	114	44	845
Netherlands	140	503	279
Norway	.....	.....	280
Sweden	.....	112	.....
Switzerland	16	20	47
United Kingdom	174	576	1,721
Japan	229	1,001	2,173
Other countries	7	12	.....

### Total Exports:

Crude and refined	2,540	5,241	11,390
Pipes and tubes	57	47	14
Plates and sheets	24	34	33
Semifabricated forms	469	625	325
Wire, bare	114	391	162
Building wire and cable†	96	97	72
Weatherproof wire†	1	4	3
Insulated copper wire n.e.s.†	1,751	1,437	926

\* Includes exports of refined copper resulting from scrap that was reprocessed on toll for account of the shipper. † Gross weight; n.e.s. — Not elsewhere specified.

## Comparative Metal Prices

	Av. 1939	Av. 1946	1959 Mar. 25
Copper, domestic	11.20	14.375	33.00
Electro., Del. Val.	5.05	8.25	12.00
Lead (N. Y.)	5.05	5.05	13.00
P. W. Zinc (E. St. Louis, f.o.b.)	.....	.....	13.50
New York, del.	.....	.....	99.75
Tin Spot Straits, N. Y.	.....	.....	28.10
Aluminum ingot 99½%+	20.00	15.00	28.10
Antimony (R.M.M. brand f.o.b.)	12.36	14.50	29.00
Laredo	.....	.....	.....

\* Producers' prices.

## U. S. Copper Scrap Exports

(A.B.M.S.) (Bureau of the Census)

(In tons of 2,000 lbs.)			
	Nov. 1959	Dec. 1959	Jan. 1960
Copper scrap, unalloyed* (new and old)	1,278	1,970	2,282
Canada	51	.....	181
Belgium	.....	.....	11
Germany (West)	526	191	217
Italy	66	83	189
Portugal	.....	106	25
Yugoslavia	.....	716	1,005
India	11	2	51
Japan	402	872	600
Other countries	54	.....	.....
Copper-base scrap alloyed† (new and old)	1,178	3,311	3,374
Canada	4	2	.....
Mexico	.....	1	8
France	.....	.....	60
Germany (West)	341	303	265
Italy	22	74	52
Netherlands	.....	.....	20
Switzerland	.....	56	14
United Kingdom	.....	.....	30
India	.....	8	110
Japan	716	2,808	2,783
Hong Kong	45	.....	15
Other countries	50	59	22

\* Ash, brass mill, clippings, dross, flue dust, residues, scale, skimmings, wire scrap. † Copper-base alloys, including brass and bronze — Ases, clippings for remanufacture, cupro-nickel scrap, cupro-nickel trimmings, nickel silver scrap, phosphor bronze, phosphor copper, skimmings, turnings, round.

## U. S. Zinc Exports

(A.B.M.S.) (Bureau of the Census)

(In tons of 2,000 lbs.)			
	Nov. 1959	Dec. 1959	Jan. 1960
Slabs, blocks, etc.	2,846	2,338	5,608
Mexico	39	187	341
Cuba	.....	59	50
Argentina	43	.....	.....
Brazil	19	.....	102
Chile	.....	11	.....
Netherlands	.....	.....	112
Sweden	1,679	.....	.....
United Kingdom	789	2,016	3,561
Korea	.....	.....	4
India	.....	45	1,517
New Zealand	280	.....	.....
Other countries	2	20	121

### Total Exports:

Ore, conc., slabs, blocks	2,846	2,338	5,608
Scrap, ashes, dross and skimmings	853	1,346	966
Rolled in sheets, plates and strips and die castings	300	294	187
Zinc and zinc alloys in crude and semifabricated forms	63	146	95
Zinc oxide	311	165	153

## U. S. Lead Exports

(A.B.M.S.) (Bureau of the Census)

(In tons of 2,000 lbs.)			
	Nov. 1959	Dec. 1959	Jan. 1960
Lead, ore, concentrates, matte and base bullion (content)	7	.....	20
Canada	.....	.....	16
Mexico	.....	7	4
Pigs and bars	45	82	13
Canada	1	.....	.....
Mexico	.....	.....	7
Guatemala	26	.....	.....
Chile	.....	.....	2
Venezuela	1	.....	.....
Philippines	.....	67	4
Japan	.....	5	.....
Other countries	17	10	.....

### Total Exports:

Ore, base bullion, refined..	45	89	33
Scrap	210	118	163
Lead plate, including battery plate, not assembled as complete battery units	3	.....	21
Babbitt metal	10	12	12
Lead and lead base alloys in semifabricated forms	64	22	24



## World Production of Copper

### (American Bureau of Metal Statistics)

	(In Tons of 2,000 Pounds)													
	United States	Canada	Mexico	Chile	Peru	Fed. Rep. of Germany	Norway	United Kingdom	Yugoslavia	India	Japan	Turkey	Australia	Union of South Africa
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)
1955	1,036,702	326,599	61,583	447,288	35,478	286,805	14,876	138,271	31,151	8,432	124,908	26,313	41,935	350,302
Total 1955	1,036,702	326,599	61,583	447,288	35,478	286,805	14,876	138,271	31,151	8,432	124,908	26,313	41,935	350,302
1956	1,133,134	356,251	69,918	506,251	85,005	279,461	16,467	127,365	32,390	8,827	139,062	27,101	55,711	435,186
Total 1956	1,133,134	356,251	69,918	506,251	85,005	279,461	16,467	127,365	32,390	8,827	139,062	27,101	55,711	435,186
1957	1,115,483	360,745	42,905	.....	46,141	255,710	17,265	121,799	37,186	9,298	143,654	27,101	55,633	499,418
Total 1957	1,115,483	360,745	42,905	.....	46,141	255,710	17,265	121,799	37,186	9,298	143,654	27,101	55,633	499,418
1958	95,541	27,546	6,294	40,913	3,637	24,649	1,749	12,027	2,870	792	12,583	.....	.....	17,291
Sept.	95,541	27,546	6,294	40,913	3,637	24,649	1,749	12,027	2,870	792	12,583	.....	.....	17,291
Oct.	72,214	22,572	5,380	47,230	2,635	1,618	11,225	3,616	809	13,310	.....	.....	.....	4,726
Nov.	96,369	20,368	5,040	46,310	3,923	24,932	1,594	8,542	3,462	774	11,764	.....	.....	4,749
Dec.	97,641	19,023	5,066	46,284	3,196	25,569	1,597	9,042	2,929	832	15,054	.....	.....	25,612
Total 1958	1,881,170	346,816	68,386	462,064	42,760	295,312	19,529	106,134	37,116	9,062	136,612	24,676	72,361	426,513
1959	95,542	24,669	5,342	44,579	3,115	25,945	1,734	7,356	3,685	679	17,385	2,469	5,349	48,699
Jan.	95,542	24,669	5,342	44,579	3,115	25,945	1,734	7,356	3,685	679	17,385	2,469	5,349	48,699
Feb.	88,432	28,016	4,810	43,589	1,827	24,289	1,599	9,211	3,521	557	11,388	1,614	5,930	44,420
Mar.	101,410	32,427	4,771	44,554	1,601	26,959	1,694	8,654	3,536	810	10,746	2,034	4,573	51,630
Apr.	98,376	32,130	5,201	42,715	4,250	26,859	1,870	11,259	3,593	763	17,938	2,320	7,419	48,150
May	104,236	32,622	5,275	46,083	3,770	25,358	1,771	7,693	5,503	764	18,516	2,480	6,408	53,067
June	99,419	36,979	5,847	46,901	3,357	24,635	1,743	10,909	3,231	776	18,621	2,362	8,133	53,895
July	81,662	36,967	5,755	45,508	3,676	25,890	1,639	7,108	3,369	781	18,957	1,846	5,346	48,806
Aug.	51,327	35,045	5,328	50,093	2,533	24,716	1,677	6,810	1,810	774	18,805	2,378	5,798	50,285
Sept.	19,503	35,740	4,125	44,433	8,782	25,357	1,986	10,438	3,619	799	18,837	2,427	7,111	48,753
Oct.	20,931	35,980	4,068	36,449	3,061	27,840	1,800	8,951	3,137	804	18,898	2,304	.....	49,519
Nov.	18,351	35,271	4,886	50,877	2,904	25,258	1,495	10,076	.....	802	.....	.....	.....	49,232
Dec.	26,686	.....	4,872	53,186	3,438	27,710	.....	8,736	.....	421	.....	.....	.....	48,350
Total 1959	65,081	.....	4,326	.....	2,901	.....	.....	.....	.....	.....	.....	.....	.....	56,495

(a) Reported by Copper Institute. Crude. (b) Recoverable contents of mine production or smelter production or shipments, and custom intake. (c) Does not include intake of scrap nor of imported ore except that received from Cuba and Philippines. (d) Blister copper plus recoverable copper in concentrates, matte, etc., exported. (e) Crude copper, i. e., copper content of blister or converter copper as originally produced in the several countries, although some of it may be refined at home; e. g., in Rhodesia. (f) Blister and/or refined. (g) Refined. There are quantities of scrap included in the electrolytic production in addition to that reported, tonnage of which is not obtainable. (h) Smelter production. (i) Refinery production from imported blister only. (j) British Bureau of Non-Ferrous Metal Statistics. \* Refined.

## World Production of Refined Lead

### (American Bureau of Metal Statistics)

	United States	Canada	Mexico	Peru	Belgium	France	Fed. Rep. of Germany	Italy	Spain	Yugoslavia	Japan	Australia	French Morocco	Tunisia	Rhodesia	Total
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)
1955	547,153	148,811	221,138	67,303	91,241	73,251	162,508	46,806	67,509	83,347	40,912	254,558	28,870	28,620	17,976	1,893,125
Total 1955	547,153	148,811	221,138	67,303	91,241	73,251	162,508	46,806	67,509	83,347	40,912	254,558	28,870	28,620	17,976	1,893,125
1956	613,293	147,865	213,524	61,917	111,479	73,251	178,713	42,780	64,824	83,507	51,019	256,300	30,993	26,623	17,024	1,984,344
Total 1956	613,293	147,865	213,524	61,917	111,479	73,251	178,713	42,780	64,824	83,507	51,019	256,300	30,993	26,623	17,024	1,984,344
1957	604,533	142,935	218,266	55,971	.....	94,509	195,136	42,336	61,332	85,313	59,670	261,035	34,442	27,069	12,364	2,041,530
Total 1957	604,533	142,935	218,266	55,971	.....	94,509	195,136	42,336	61,332	85,313	59,670	261,035	34,442	27,069	12,364	2,041,530
1958	42,689	10,908	16,256	5,192	7,840	8,202	15,700	4,367	5,692	6,942	3,587	22,632	2,184	2,369	1,120	158,235
Sept.	42,689	10,908	16,256	5,192	7,840	8,202	15,700	4,367	5,692	6,942	3,587	22,632	2,184	2,369	1,120	158,235
Oct.	45,467	12,598	16,205	5,074	8,242	9,308	17,130	4,639	7,132	7,242	3,522	22,482	3,560	2,410	1,176	164,818
Nov.	40,486	10,645	17,067	6,448	9,495	9,068	17,735	5,825	6,914	11,155	3,555	20,148	2,625	2,519	1,120	165,408
Dec.	44,042	11,076	20,902	5,344	10,342	10,351	18,370	5,101	7,069	11,212	3,769	21,492	4,002	2,719	1,120	179,309
Total 1958	575,612	130,886	246,443	80,999	119,192	111,337	223,973	60,860	77,460	92,903	52,915	271,654	42,266	32,359	16,492	1,955,753
1959	43,662	14,073	19,031	4,951	10,761	6,694	18,658	4,636	6,215	4,082	6,086	22,470	2,575	1,068	1,344	169,256
Jan.	43,662	14,073	19,031	4,951	10,761	6,694	18,658	4,636	6,215	4,082	6,086	22,470	2,575	1,068	1,344	169,256
Feb.	39,498	12,740	15,472	2,662	9,460	5,812	17,869	4,367	6,020	8,596	6,474	22,037	2,319	1,765	1,344	157,925
Mar.	39,238	13,704	16,305	3,424	8,447	6,733	17,553	3,168	6,196	8,153	6,889	20,144	1,905	2,429	1,344	156,914
Apr.	40,606	13,655	16,621	4,438	9,038	5,541	17,141	4,987	6,435	8,876	6,515	23,919	2,726	2,155	1,344	162,611
May	39,101	13,357	16,934	6,008	8,797	7,725	16,314	5,614	7,435	8,369	6,137	23,499	2,050	1,784	1,344	165,602
June	37,459	12,997	20,000	6,540	9,125	9,776	18,128	2,453	6,510	7,854	6,349	25,151	1,652	926	1,344	164,815
July	32,882	8,096	17,099	6,401	8,734	6,065	16,381	4,384	6,074	2,221	5,303	19,125	2,859	1,749	1,344	139,291
Aug.	25,589	7,357	19,886	4,267	7,547	6,581	15,256	3,354	6,049	8,645	5,344	21,168	862	2,863	1,344	136,725
Sept.	14,801	9,775	14,320	4,354	7,217	6,161	17,773	4,502	4,728	8,731	5,322	22,786	3,567	2,352	1,344	128,850
Oct.	18,892	9,897	17,988	6,093	7,107	6,004	18,070	4,494	6,993	10,938	5,325	15,403	3,618	2,046	1,344	134,911
Nov.	18,796	.....	18,223	6,199	7,768	6,431	17,820	4,104	6,193	.....	4,663	24,226	3,466	2,669	1,344	134,911
Dec.	30,160	.....	16,448	5,826	7,708	6,581	19,726	4,638	.....	.....	.....	24,226	3,466	2,669	1,344	134,911
Total 1959	40,043	.....	15,821	6,127	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,309	.....

(a) Production credited to Australia includes lead refined in England from Australian base bullion.

## World Production of Slab Zinc

### (American Bureau of Metal Statistics)

	United States (a)	Can. (b)	Mexico (c)	Peru (d)	Belgium (e)	France (f)	Fed. Rep. of Germany (g)	Great Britain (h)	Italy (i)	Netherlands (j)	Norway (k)	Spain (l)	Yugoslavia (m)	Japan (n)	Australia (o)	Rhodesia (p)	Total (q)
1955	1,031,018	257,008	61,879	18,943	233,623	123,623	197,024	90,917	77,761	31,203	49,724	26,244	15,175	122,965	113,221	31,248	2,534,457
Total 1955	1,031,018	257,008	61,879	18,943	233,623	123,623	197,024	90,917	77,761	31,203	49,724	26,244	15,175	122,965	113,221	31,248	2,534,457
1956	1,062,954	255,601	62,136	10,428	251,906	124,105	204,961	90,784	80,407	32,123	53,170	25,224	15,434	153,821	117,445	32,396	2,630,383
Total 1956	1,062,954	255,601	62,136	10,428	251,906	124,105	204,961	90,784	80,407	32,123	53,170	25,224	15,434	153,821	117,445	32,396	2,630,383
1957	1,574,500	247,356	62,354	35,772	259,701	148,455	202,627	85,348	81,179	32,786	52,787	24,279	30,256	152,145	123,587	33,040	2,691,699
Total 1957	1,574,500	247,356	62,354	35,772	259,701	148,455	202,627	85,348	81,179	32,786	52,787	24,279	30,256	152,145	123,587	33,040	2,691,699
1958	62,297	21,152	5,216	2,822	18,308	14,253	16,204	6,689	5,991	2,533	3,793	2,259	2,820	12,420	11,075	2,912	.....
Aug.	63,706	20,581	5,025	2,840	17,961	12,232	15,635	6,887	5,991	2,533	3,793	2,259	2,820	12,420	11,075	2,912	199,142
Sept.	65,304	21,125	5,344	2,305	17,866	14,176	16,462	6,046	6,442	2,820	4,915	2,813	2,793	14,436	11,045	2,940	203,169
Oct.	65,174	20,274	5,197	2,625	18,696	13,274	16,196	6,158	5,874	2,249	4,669	2,244	3,370	13,501	10,508	2,828	197,481
Nov.	75,503	21,705	5,837	2,686	19,402	13,844	17,090	7,664	6,344	2,332	4,755	2,262	2,684	12,473	10,860	2,856	213,093
Dec.	892,607	254,661	16,534	34,685	267,540	177,422	210,408	80,494	5,965	2,841	54,423	26,750	34,446	166,883	128,548	39,508	2,464,639
Total 1958	892,607	254,661	16,534	34,685	267,540	177,422	210,408	80,494	5,965	2,841	54,423	26,750	34,446	166,883	128,548	39,508	2,464,639
1959	76,481	21,456	5,476	2,753	19,857	13,903	17,164	5,955	5,617	2,693	4,826	2,028	2,647	11,679	10,541	2,800	211,506
Jan.	71,174	19,709	4,915	1,497	19,838	13,491	15,632	6,123	4,735	2,927	4,928	1,926	2,510	14,105	9,617	2,548	199,495
Feb.	79,918	22,135	5,439	2,363	20,215	14,230	17,325	7,797	5,601	2,921	4,917	2,369	3,014	13,217	10,759	2,800	221,376
Mar.	76,393	21,512	5,225	2,502	20,408	14,087	16,426	6,030	7,039	2,816	3,621	2,239	2,509	15,645	10,472	2,716	216,878
Apr.	77,489	21,147	5,108	2,545	21,181	13,902	16,633	6,595	7,790	2,823	4,798	2,273	2,701	16,171	11,137	2,744	226,057
May	75,544	21,250	4,776	2,524	21,004	14,120	16,185	8,271	7,164	2,899	4,759	2,180	2,083	15,873	10,899	2,716	218,181
June	78,101	21,055	5,088	2,634	20,100	14,265	16,325	6,112	7,303	2,917	4,539	2,057	3,796	15,233	11,189	2,856	215,525
July	89,768	21,588	4,965	2,504	19,472	14,438	16,507	7,870	7,980	2,968	4,646	2,198	3,855	15,906	11,599	2,912	211,964
Aug.	82,202	20,744	4,935	2,537	19,387	11,883	16,366	7,892	6,819	2,923	4,708	2,068	3,013	15,133	10,985	2,800	199,550
Sept.	83,938	21,744	5,084	2,545	20,512	13,228	17,064	5,657	6,941	3,073	4,458	2,315	3,020	15,932	11,384	2,884	206,111
Oct.	82,346	21,039	5,072	2,608	21,180	12,251	16,689	6,203	6,403	2,967	3,750	2,245	.....	.....	10,904	2,800	.....
Nov.	69,666	21,963	5,330	2,678	.....	12,807	17,336	7,772	6,519	3,201	3,074	.....	.....	.....	11,305	2,906	.....
Dec.	69,666	21,963	5,330	2,678	.....	12,807	17,336	7,772	6,519	3,201	3,074	.....	.....	.....	11,305	2,906	.....
Total 1959	76,481	21,456	5,476	2,753	19,857	13,903	17,164	5,955	5,617	2,693	4,826	2,028	2,647	11,679	10,541	2,800	211,506



## U. K. Stocks of Zinc

(British Bureau of Non-Ferrous Metal Statistics)

(In tons of 2,240 lbs.)

	Virgin Zinc		Zinc Conc.	
At start of:	1959	1960	1959	1960
Jan.	34,166	56,371	...	...
Feb.	34,805	58,518	...	...
Mar.	36,850	57,897	...	...
Apr.	38,457	52,151	...	...
May	38,643	47,936	...	...
June	37,713	41,954	...	...
July	38,297	45,640	...	...
Aug.	37,427	43,948	...	...
Sept.	40,358	42,385	...	...
Oct.	40,995	39,233	...	...
Nov.	35,994	38,948	...	...
Dec.	35,460	47,131	...	...

## U. K. Zinc Imports

(British Bureau of Non-Ferrous Metal Statistics)

(In tons of 2,240 lbs.)

	1959	1960
	Nov.	Dec.
Zinc ore and concentrates (Gross Weight)	14,547	13,266
Zinc conc.*	14,561	6,745
Australia	9,268	2,701
Canada	3,227	2,298
Peru	1,109	11
Burma	893	1,020
Turkey	64	...
Other countries	715	...
Zinc and zinc alloys (Gross Weight)	14,707	16,201
Rhodesia-Nyasaland	250	200
Australia	852	1,403
Canada	3,652	6,542
Belgium	2,450	1,749
Germany (W.)	574	201
Netherlands	371	425
Soviet Union	2,109	2,436
United States	609	1,300
Belgian Congo	2,185	220
Poland	750	300
Other countries	905	1,425

\* British Bureau of Non-Ferrous Metal Statistics. The estimated zinc content is not the content of the gross weight as officially reported for any comparable period.  
† Not available.

## U. K. Copper Exports

(British Bureau of Non-Ferrous Metal Statistics)

(In tons of 2,240 lbs.)

	1959	1960
	Nov.	Dec.
Copper unwrought—ingots, blocks, slabs, bars, etc.	5,808	6,348
Plates, sheets, rods, etc.	2,825	5,527
Wire (including uninsulated electric wire)	281	2,674
Tubes	1,427	1,139
Other copper, worked (including pipe fittings)	163	154
Total	10,504	15,842

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## Copper Consumption in United Kingdom

British Bureau of Non-Ferrous Metal Statistics

(In tons of 2,240 pounds)

	Unalloyed	Alloyed*	Total	Virgin	Scrap
1956 Total	388,167	251,312	639,479	500,794	138,685
1957 Total	407,326	234,158	641,484	507,493	133,991
1958					
September	42,813	18,596	61,408	52,018	9,390
October	43,402	21,788	65,190	53,937	11,253
November	40,987	19,232	60,219	47,932	12,287
December	37,580	19,118	56,698	45,968	10,730
Total	442,977	225,001	667,978	534,619	133,359
1959					
January	32,678	21,217	52,979	39,815	13,164
February	29,373	19,020	48,293	35,775	12,518
March	27,864	19,567	47,431	36,124	11,307
April	32,742	22,782	55,525	43,015	12,509
May	28,421	19,199	47,620	33,367	14,253
June	35,009	21,103	56,112	44,761	11,351
July	24,714	19,858	44,572	32,034	12,538
August	24,524	16,097	40,621	30,866	9,755
September	35,447	21,920	57,367	45,178	12,189
October	37,221	23,880	61,101	47,345	13,756
November	37,463	23,392	60,855	47,031	13,824
December	36,044	23,202	59,246	44,753	14,493
Total	382,295	250,871	633,166	478,819	154,347

\* Includes copper sulphate effective October, 1954.

## U. K. Virgin Copper Stocks Zinc Imports and Exports By Principal Countries

(British Bureau of Non-Ferrous Metal Statistics)

(A.B.M.S.)  
Reported in pigs, bars, etc.; metric tons except where otherwise noted.

	1959	1960
	Oct.	Nov.
At start of 1958	91,477	64,184
Jan.	91,477	64,184
Feb.	82,483	65,941
Mar.	89,147	65,875
Apr.	94,330	72,946
May	88,582	72,318
June	88,913	78,505
July	81,851	80,477
Aug.	84,756	81,986
Sept.	89,899	89,483
Oct.	85,092	77,803
Nov.	74,696	64,602
Dec.	69,023	60,936
U. S. (s.t.)	16,839	11,045
Canada (s.t.)	2	...
Belgium	244	...
Denmark	768	792
France	728	496
Germany, W.*	11,066	10,958
Italy	412	...
Netherlands	1,123	886
Sweden	3,639	2,775
Switzerland*	1,269	1,749
U. K. (l.t.)	12,599	14,707
India† (l.t.)	3,019	4,176

## U. K. Refined Lead Stocks

(British Bureau of Non-Ferrous Metal Statistics)

(In long tons)

	1959	1960
At start of 1958	51,296	45,444
Jan.	51,296	45,444
Feb.	49,134	48,102
Mar.	47,738	40,535
Apr.	40,547	53,289
May	37,509	62,286
June	34,608	63,135
July	40,518	57,810
Aug.	37,148	67,586
Sept.	43,758	66,048
Oct.	48,856	63,121
Nov.	40,216	56,697
Dec.	35,335	46,984

	1959	1960
	Oct.	Nov.
U. S. (s.t.)	1,354	2,846
Canada (s.t.)	13,505	17,902
Belgium	11,987	...
Denmark	120	103
France	689	676
Germany, W.*	1,379	1,266
Italy	1,090	...
Netherlands	2,199	1,476
Norway	2,720	...
Switzerland*	216	528
U. K.† (l.t.)	486	642
Northern Rhodesia† (l.t.)	3,047	3,022
Australia (l.t.)	2,933	3,096
Belgian Congo	4,779	...

\* Includes scrap.  
† Includes manufactures.  
‡ British Bureau of Non-Ferrous Metal Statistics.

## United Kingdom Tin Statistics

(British Bureau of Non-Ferrous Metal Statistics)

	Imports	Production*	Stock at end of period*	Imports	Production*	Consumption	Exports & Re-exports	Stock at end of period
1957 Total	39,272	1,028	9,834	34,175	20,365	7,362	21,931	16,744
1958 Total	27,419	1,090	13,195	32,551	20,418	20,398	19,054	14,715
1959								13,264
January	1,337	113	324	2,925	1,769	2,381	16,744	14,715
February	1,817	115	230	1,677	1,614	4,153	14,715	13,264
March	1,545	100	1,595	1,572	1,773	2,658	13,264	10,635
April	1,743	103	1,798	1,636	1,745	3,326	10,635	9,445
May	1,493	92	1,575	28	1,808	1,686	2,421	9,445
June	1,323	129	920	25	2,267	1,987	2,919	9,445
July	2,971	112	2,043	47	2,785	1,652	2,639	11,258
August	1,970	68	1,704	21	1,908	1,224	2,956	10,624
September	2,990	115	2,132	33	2,229	2,093	3,742	10,383
October	2,259	108	1,851	24	3,101	1,915	1,986	10,545
November	3,936	...	3,317	25	2,513	1,861	1,997	11,528
December	2,161	...	2,941	15	2,858	1,927	1,513	11,528
Total	25,812	...	853	27,229	21,378	21,368	...	...

\* As reported by International Tin Study Group. Production of Tin Metal includes production from imported scrap and residues refined on toll. Stocks exclude strategic stock but include official warehouse stocks.

## Canada's Copper Output

(Dominion Bureau of Statistics)

(Refined Copper)

(In Tons)

	1956	1957	1958	1959
Jan. . .	26,653	25,469	32,868	24,664
Feb. . .	26,229	21,861	28,668	28,016
Mar. . .	26,750	27,663	29,239	32,427
Apr. . .	26,617	27,398	30,635	32,130
May . .	27,626	29,086	32,471	32,622
June . .	27,122	24,093	32,418	36,979
July . .	27,250	27,195	31,131	36,067
Aug. . .	29,219	26,943	30,867	35,045
Sept. .	27,950	24,633	27,546	35,740
Oct. . .	29,696	30,312	22,572	....
Nov. . .	27,346	27,331	20,368	....
Dec. . .	28,716	31,604	19,033	....
Year	331,174	323,588	346,816	....

## Canada's Copper Exports

(Dominion Bureau of Statistics)

(Ingots, bars, slabs and billets)

(In Tons)

	1956	1957	1958	1959
Jan. . .	15,981	20,582	26,883	10,620
Feb. . .	11,041	16,272	16,816	10,304
Mar. . .	12,276	14,270	18,662	11,025
Apr. . .	14,476	16,417	23,261	17,079
May . .	12,851	19,048	19,358	21,739
June . .	10,985	10,826	20,831	21,310
July . .	13,599	18,621	21,703	13,650
Aug. . .	14,710	21,980	15,881	15,155
Sept. .	17,268	14,314	15,373	28,684
Oct. . .	13,896	13,110	20,341	....
Nov. . .	19,130	16,622	14,391	....
Dec. . .	18,630	16,282	11,138	....
Year	174,843	198,794	224,638	....

## Canada's Lead Output

(Dominion Bureau of Statistics)

(Recoverable Lead) \*

(In Tons)

	1956	1957	1958	1959
Jan. . .	16,002	14,032	17,117	17,118
Feb. . .	14,344	15,170	14,908	15,923
Mar. . .	16,857	16,940	15,421	17,389
Apr. . .	11,573	14,275	15,644	16,237
May . .	15,446	14,591	15,131	16,813
June . .	18,145	16,431	15,645	14,968
July . .	15,841	14,377	14,076	16,111
Aug. . .	16,104	14,679	12,260	14,104
Sept. .	15,760	15,869	15,401	12,420
Oct. . .	16,725	14,151	14,564	13,958
Nov. . .	14,865	15,879	16,680	....
Dec. . .	16,056	15,296	18,248	....
Year	188,971	171,690	185,095	....

\* New base bullion from Canadian ores plus recoverable lead in ores or concentrates shipped for export.

## Canada's Lead Exports

(Dominion Bureau of Statistics)

(In Pigs)

(In Tons)

	1956	1957	1958	1959
Jan. . .	4,888	8,946	4,752	5,034
Feb. . .	3,856	6,633	1,553	6,377
Mar. . .	4,007	7,044	9,497	11,831
Apr. . .	7,636	7,314	7,450	7,836
May . .	7,214	9,676	7,764	12,230
June . .	6,632	7,210	4,036	15,610
July . .	9,696	4,682	12,629	3,478
Aug. . .	4,713	6,416	7,232	4,023
Sept. .	9,908	8,467	5,125	3,895
Oct. . .	9,072	7,761	10,320	4,885
Nov. . .	9,227	6,175	10,641	....
Dec. . .	2,734	4,217	11,352	....
Year	79,633	84,541	92,351	....

## Canada's Zinc Output

(Dominion Bureau of Statistics)

(Refined Zinc)

(In Tons)

	1956	1957	1958	1959
Jan. . .	21,696	20,340	21,801	21,456
Feb. . .	20,356	19,808	19,743	19,709
Mar. . .	22,010	21,941	22,314	22,135
Apr. . .	21,339	20,504	20,989	21,512
May . .	21,790	20,564	21,269	21,147
June . .	20,780	19,928	20,353	21,250
July . .	21,691	20,061	20,873	21,055
Aug. . .	21,354	20,305	21,152	21,588
Sept. .	20,691	20,247	20,530	20,744
Oct. . .	21,412	20,892	21,125	21,744
Nov. . .	20,470	20,933	20,273	....
Dec. . .	22,012	21,823	21,705	....
Year	255,607	247,351	252,157	....

## Canada's Zinc Exports

(Dominion Bureau of Statistics)

(Slabs in Tons)

	1956	1957	1958	1959
Jan. . .	15,550	19,304	17,349	13,565
Feb. . .	11,757	16,618	8,376	12,675
Mar. . .	8,822	14,923	19,636	14,617
Apr. . .	14,317	17,131	16,346	12,789
May . .	11,357	16,680	15,121	11,049
June . .	15,296	16,157	7,776	20,298
July . .	15,499	12,912	27,394	23,122
Aug. . .	13,070	20,520	15,906	18,464
Sept. .	19,732	17,671	8,670	14,367
Oct. . .	20,792	16,735	22,810	12,518
Nov. . .	21,411	17,225	17,978	....
Dec. . .	16,125	16,131	18,344	....
Year	183,728	202,007	195,707	....

## Canada's Silver Exports

(Dominion Bureau of Statistics)

(In ores and concentrates)

(Fine Ounces)

	1957	1958	1959
Jan. . .	253,940	634,715	185,367
Feb. . .	380,463	208,149	329,742
Mar. . .	521,849	350,827	425,973
Apr. . .	431,646	284,971	989,593
May . .	523,228	376,082	564,017
June . .	468,559	438,253	871,570
July . .	844,545	529,770	728,598
Aug. . .	811,530	279,511	688,042
Sept. .	861,857	583,570	763,017
Oct. . .	432,000	323,475	767,939
Nov. . .	263,273	217,892	....
Dec. . .	186,569	871,573	....
Year	5,979,459	5,098,788	....

## Canada's Silver Output

(Dominion Bureau of Statistics)

(In Ounces)

	1957	1958	1959
Jan. . .	2,158,631	2,529,583	3,094,440
Feb. . .	2,051,679	2,294,655	2,264,903
Mar. . .	2,346,316	2,448,698	2,782,307
Apr. . .	2,225,638	2,558,958	2,691,503
May . .	2,111,185	2,650,665	2,499,149
June . .	2,208,584	2,527,632	2,676,937
July . .	2,383,390	2,385,687	2,867,957
Aug. . .	2,592,468	2,884,154	2,519,033
Sept. .	2,382,121	2,856,304	2,446,846
Oct. . .	2,817,358	2,390,027	3,072,219
Nov. . .	2,566,519	2,643,790	....
Dec. . .	2,537,984	2,917,528	....
Year	28,361,873	31,087,681	....

## Canada's Nickel Output

(Dominion Bureau of Statistics)

(In Tons)

	1956	1957	1958	1959
Jan. . .	14,985	16,609	16,710	8,047
Feb. . .	14,997	15,027	15,896	12,616
Mar. . .	15,504	16,733	15,853	14,922
Apr. . .	14,431	15,347	15,163	15,493
May . .	15,203	16,225	15,231	16,622
June . .	14,492	15,447	14,603	16,599
July . .	15,125	15,878	12,851	16,190
Aug. . .	14,852	16,756	12,597	16,784
Sept. .	14,530	15,604	11,786	16,205
Oct. . .	15,762	15,628	3,682	....
Nov. . .	15,062	14,587	3,178	....
Dec. . .	14,824	15,096	3,298	....
Year	178,767	188,962	140,842	....

METALS, MARCH, 1960

## Canadian Copper Exports

(Dominion Bureau of Statistics)

	(In tons of 2,000 lbs.)		
	Nov.	Dec.	Jan.
Ore, matte, regulus, etc. (content) .....	1,992	3,693	6,745
United States ..	389	1,480	4,136
Belgium .....	...	...	63
Germany (W.) ..	...	46	76
Norway .....	1,198	2,011	2,288
United Kingdom ..	128	156	182
Japan .....	277	...	...
Ingots, bars, billets, anodes ..	27,649	23,872	29,046
United States ..	16,622	16,117	15,634
Belgium .....	280	...	280
France .....	840	504	2,576
Germany (W.) ..	390	588	920
Italy .....	84	...	...
Netherlands .....	784	168	504
Portugal .....	...	...	56
Sweden .....	...	...	112
United Kingdom ..	7,978	5,881	8,477
India .....	669	612	487
Other countries ..	2	2	...
<b>Total Exports:</b>			
Crude and refined .....	29,641	27,565	35,791
Old and scrap ..	1,117	997	578
Rods, strips, sheet and tubing .....	1,889	2,730	1,976

## Canadian Zinc Exports

(Dominion Bureau of Statistics)

	(In tons of 2,000 lbs.)		
	Nov.	Dec.	Jan.
Ore (zinc content) .....	16,576	11,043	18,445
United States ..	12,878	10,483	11,557
Belgium .....	...	...	607
Germany (W.) ..	...	...	310
Norway .....	...	...	4,499
United Kingdom ..	3,698	560	1,472
Slab zinc .....	17,902	14,637	14,874
United States ..	9,097	6,656	5,700
United Kingdom ..	8,743	7,539	9,096
Korea .....	62	332	...
Hong Kong .....	...	...	56
Philippines .....	...	...	22
Other countries ..	...	110	...
<b>Total Exports:</b>			
Ore and slabs ..	34,478	25,680	33,319
Zinc scrap, dross, ashes ..	438	1,599	134
United States ..	47	166	76
Belgium .....	25	1,390	58
Germany (W.) ..	...	43	...
Netherlands .....	314	...	...
Japan .....	52	...	...

## French Copper Imports

(A. B. M. S.)

	(In metric tons)		
	Nov.	Dec.	Jan.
Crude copper for refining (blister, black and cement) .....	...	813	...
Belgian Congo .....	...	813	...
Refined .....	7,610	10,580	12,276
United States ..	333	360	876
Canada .....	762	1,473	762
Chile .....	...	51	370
Belgium .....	3,170	4,575	3,701
Germany (W.) ..	69	51	53
Norway .....	152	152	228
Sweden .....	38	...	5
Belgian Congo ..	775	2,218	4,110
Rhodesia-Nyasaland ..	2,311	1,700	2,171

METALS, MARCH, 1960

## Canadian Lead Exports

(Dominion Bureau of Statistics)

	(In tons of 2,000 lbs.)		
	Nov.	Dec.	Jan.
Ore (lead content) .....	2,381	1,684	8,356
United States ..	2,381	1,684	5,030
Belgium .....	...	...	1,505
Germany (W.) ..	...	...	1,821
Refined lead .....	6,785	10,218	5,549
United States ..	1,821	4,472	1,291
United Kingdom ..	4,964	5,691	4,258
Other countries ..	...	55	...
<b>Total Exports:</b>			
Ore and refined ..	9,166	11,902	13,905
Pipe and tubing ..	2	...	...
Lead scrap .....	115	620	377

## Copper Imports and Exports By Principal Countries

(A.B.M.S.)

Reported in ingots, slabs, etc.; metric tons except where otherwise noted.

	1959		
	Oct.	Nov.	Dec.
<b>IMPORTS</b>			
U. S. (blister, s.t.) ..	17,791	20,417	34,528
(ore, etc., s.t.) ..	6,674	3,381	5,226
(ref., s.t.) .....	19,833	43,713	40,200
Belgium* .....	15,732	...	...
Denmark .....	718	...	...
France (crude) ..	813	...	813
(refined) .....	12,955	7,610	10,580
Italy .....	11,023	...	...
Germany, W. ....	30,750	30,232	...
Netherlands .....	3,199	1,119	1,949
Norway .....	143	...	...
Sweden .....	5,439	4,881	...
Switzerland .....	1,538	1,723	1,952
U. K. (l.t.) .....	37,023	33,957	35,638
India (blister/-ref., l.t.)† ..	5,820	5,973	4,647
<b>EXPORTS</b>			
U. S. (ore and unref., s.t.) ..	...	231	95
(ref., s.t.) .....	4,404	2,309	5,146
Canada .....	...	...	...
(refined, s.t.) ..	21,348	27,649	23,872
Belgium* .....	13,561	...	...
Finland† .....	727	436	...
Germany, W. ....	9,881	9,166	...
Norway .....	5,713	...	...
Sweden .....	3,311	2,656	...
U. K. (l.t.) .....	5,787	5,808	6,348
Turkey* .....	293	...	...
Belgian Congo† ..	26,933	...	...
N. Rhodesia (blister & ref., l.t.)†	53,649	41,701	44,531

\* Includes alloys.

† British Bureau of Non-Ferrous Metal Statistics.

‡ Copper wire bars and ingot bars 99% and copper ingots 97%.

§ Includes old.

## Canada's Nickel Exports

(Dominion Bureau of Statistics)

(Refined, in oxides, matte, etc.)

	(In Tons)		
	1957	1958	1959
January .....	14,260	14,233	6,767
February .....	9,974	12,157	7,976
March .....	14,968	12,316	14,006
April .....	18,671	20,962	14,213
May .....	18,351	20,574	16,142
June .....	14,589	16,144	15,901
July .....	14,181	14,055	11,985
August .....	14,966	18,012	13,664
September .....	14,160	14,371	19,143
October .....	13,370	8,335	...
November .....	16,620	3,001	...
December .....	14,606	5,060	...
<b>Year .....</b>	<b>178,656</b>	<b>154,220</b>	<b>...</b>

## French Zinc Imports

(A. B. M. S.)

	(In metric tons)		
	Nov.	Dec.	Jan.
Ore (Gross Weight) .....	14,604	22,167	14,747
Peru .....	...	...	250
Belgium .....	...	...	23
Finland .....	1,700	...	...
Greece .....	1,576	...	5,270
Italy .....	2,080	2,131	1,511
Norway .....	1,066	...	528
Spain .....	...	...	1,057
Yugoslavia .....	...	944	...
Algeria .....	3,691	6,128	3,000
Morocco .....	2,981	10,116	2,946
Tunisia .....	2,110	...	...
Belgian Congo ..	...	2,848	...
Burma .....	...	...	162
Slabs, bars, blocks, etc. ....	496	1,122	714
Belgium .....	200	600	400
Italy .....	127	102	102
Netherlands .....	...	240	...
Algeria .....	6	18	9
Rhodesia & Nyasaland .....	163	162	203

## French Metal Exports

(A. B. M. S.)

	(In metric tons)		
	Nov.	Dec.	Jan.
<b>LEAD</b>			
Ore (Gross Weight) .....	234	215	1,622
Pig lead .....	726	746	674
United States ..	...	275	...
Germany (W.) ..	153	...	...
Switzerland .....	255	310	510
Egypt .....	307	150	149
Other countries ..	11	11	15
Antimonial lead ..	59	66	63
<b>COPPER</b>			
Crude copper for refining (blister, black & cement) .....	815	858	1,281
<b>ZINC</b>			
Slabs, bars, blocks, etc. ....	676	647	519

## U. K. Copper Imports

(British Bureau of Non-Ferrous Metal Statistics)

	(In tons of 2,240 lbs.)		
	Nov.	Dec.	Jan.
(Gross Weight)			
Copper and copper alloys ..	33,957	35,638	44,384
U. of S. Africa ..	1,050	700	1,050
Rhodesia-Nyasaland ..	18,893	19,290	28,439
Canada .....	5,100	5,613	6,081
Belgium .....	133	279	252
Germany (W.) ..	47	37	22
Norway .....	300	250	252
Sweden .....	...	2	...
United States ..	724	292	952
Chile .....	7,024	7,746	6,570
Peru .....	100	100	...
Belgian Congo ..	250	749	500
Other countries ..	336	580	266
Of which:			
Electrolytic .....	20,833	22,932	34,204
Other refined ..	3,925	4,625	3,701
Blister or Wrought .....	8,541	7,612	6,334
Wrought and alloys .....	658	469	145
<b>Total .....</b>	<b>33,957</b>	<b>35,638</b>	<b>44,384</b>



## Nonferrous Castings

### MONTHLY SHIPMENTS, BY TYPE OF METAL (Bureau of Census — Thousands of Pounds)

	Alu- minum	Copper	Mag- nesium	Zinc	Lead Die
1954 Total	607,764	834,557	25,572	474,741	18,396
1955 Total	833,058	1,011,748	27,892	781,254	21,045
1956 Total	801,136	966,473	36,168	88,069	20,734
1957 Total	751,856	875,389	30,322	663,330	23,791
1958					
July	38,818	51,124	2,200	32,765	1,394
August	45,034	57,790	1,869	35,860	1,804
September	52,796	64,447	2,804	47,127	1,725
October	55,699	74,012	2,627	45,045	1,708
November	55,793	62,476	2,615	48,431	1,409
December	59,487	67,905	2,612	55,600	1,497
Total	596,816	739,915	27,228	508,297	18,920
1959					
January	62,927	66,874	2,151	53,347	1,571
February	62,486	69,589	2,162	48,779	1,285
March	73,351	78,641	2,129	57,600	1,765
April	72,976	82,799	2,455	57,325	1,862
May	68,268	78,413	2,370	60,656	2,025
June	66,471	79,730	2,484	56,128	2,007
July	56,911	67,073	2,265	46,756	1,858
August	55,904	68,979	2,243	46,566	1,898
September	66,193	76,045	2,263	58,144	2,218
October	67,499	79,832	2,436	59,214	2,068
November	54,557	70,674	2,023	46,270	1,755
December	64,939	73,558	2,163	60,652	1,346

## Copper Castings Shipments

### BY TYPE OF CASTING (Bureau of Census) (Thousands of Pounds)

	Total	Sand	Permanent Mold	Die	All Other
1952 Total	1,009,910	910,862	63,865	8,259	26,924
1953 Total	990,496	888,369	61,816	10,077	30,734
1954 Total	834,557	751,804	48,849	6,480	27,394
1955 Total	1,011,748	907,862	63,041	8,541	31,408
1956 Total	966,113	866,404	57,522	10,023	32,134
1957 Total	875,389	789,819	44,746	10,776	30,048
1958					
April	59,311	53,271	3,385	949	1,705
May	57,506	51,634	3,077	891	1,904
June	57,124	51,967	3,001	839	1,317
July	51,124	46,636	2,351	792	1,345
August	57,590	52,981	2,425	682	1,702
September	64,447	58,435	2,888	876	2,248
October	74,012	67,564	3,239	790	2,419
November	62,746	57,386	2,604	810	1,946
December	67,905	61,119	3,535	1,059	2,192
Total	739,985	667,255	36,529	10,201	22,681
1959					
January	66,874	59,856	3,572	1,216	2,230
February	66,589	62,593	3,557	1,176	2,263
March	78,641	69,472	4,333	1,361	3,475
April	82,799	73,567	4,640	1,328	3,264
May	78,413	69,351	4,363	1,291	3,408
June	79,730	70,836	4,421	1,175	3,298
July	69,073	61,650	3,869	946	2,608
August	68,979	60,346	4,410	993	3,230
September	76,045	66,517	4,810	1,138	3,580
October	79,832	69,583	5,172	1,169	3,908
November	70,674	61,490	4,893	1,160	3,131
December	73,558	64,579	4,337	1,130	3,512

## Nickel Averages

Electro, cathode sheets, 99.00%,  
f.o.b. refinery, duty included  
(Cents Per Pound)

	1957	1958	1959	1960
Jan.	74.00	74.00	74.00	74.00
Feb.	74.00	74.00	74.00	74.00
Mar.	74.00	74.00	74.00	...
Apr.	74.00	74.00	74.00	...
May	74.00	74.00	74.00	...
June	74.00	74.00	74.00	...
July	74.00	74.00	74.00	...
Aug.	74.00	74.00	74.00	...
Sept.	74.00	74.00	74.00	...
Oct.	74.00	74.00	74.00	...
Nov.	74.00	74.00	74.00	...
Dec.	74.00	74.00	74.00	...
Aver.	74.00	74.00	74.00	...

## Platinum Averages

N. Y. MONTHLY QUOTATIONS  
(Dollars per Troy Ounce)

	1957	1958	1959	1960
Jan.	101.92	77.85	52.57	80.00
Feb.	98.59	74.82	59.25	83.29
Mar.	93.50	72.096	77.10	...
Apr.	93.45	70.72	77.18	...
May	92.865	67.34	77.50	...
June	92.02	66.18	77.50	...
July	90.265	64.35	78.00	...
Aug.	84.426	60.94	78.00	...
Sept.	84.00	59.50	78.00	...
Oct.	84.00	57.327	78.00	...
Nov.	83.80	56.41	78.44	...
Dec.	78.70	53.154	78.50	...
Aver.	89.79	65.07	74.17	...

## Spot Straits Tin

(Straits, Open Market, N. Y.)

### Monthly Average Prices

	1957	1958	1959	1960
Jan.	101.511	92.94	99.411	99.863
Feb.	101.132	93.915	102.785	101.178
Mar.	99.643	94.452	103.042	...
Apr.	99.304	93.988	102.505	...
May	93.347	94.512	103.125	...
June	98.05	94.708	104.25	...
July	96.52	94.898	102.337	...
Aug.	94.261	94.988	102.333	...
Sept.	93.406	94.101	102.44	...
Oct.	91.838	96.523	102.238	...
Nov.	89.236	99.118	101.021	...
Dec.	92.35	98.989	99.176	...
Aver.	96.301	95.177	102.055	...

## Prompt Tin Prices

(Straits, Open Market, N. Y.)

### Monthly Average Prices

(Cents Per Pound)

	1957	1958	1959	1960
Jan.	101.347	92.653	99.351	99.863
Feb.	100.257	93.763	102.708	100.987
Mar.	99.476	94.363	103.042	...
Apr.	99.286	92.988	102.505	...
May	98.335	94.512	103.107	...
June	98.025	94.619	104.142	...
July	96.44	94.892	102.337	...
Aug.	94.159	94.976	102.345	...
Sept.	93.313	94.054	102.435	...
Oct.	91.848	96.455	102.238	...
Nov.	89.236	98.985	100.972	...
Dec.	92.34	98.96	99.176	...
Aver.	93.672	95.069	102.03	...

## Quicksilver Averages

N. Y. Monthly Averages  
Virgin, Dollars per 76-lb Flask

	1957	1958	1959	1960
Jan.	256.00	224.35	219.50	211.30
Feb.	256.00	229.39	219.50	212.68
Mar.	256.00	232.096	223.57	...
Apr.	256.00	233.06	239.52	...
May	256.00	229.48	245.86	...
June	256.00	229.00	241.64	...
July	256.00	230.25	236.74	...
Aug.	252.20	240.27	232.524	...
Sept.	248.58	241.12	225.429	...
Oct.	234.48	235.94	224.548	...
Nov.	228.33	230.05	217.944	...
Dec.	226.50	223.54	215.05	...
Aver.	248.51	230.96	228.49	...

METALS, MARCH, 1960



## Primary Aluminum Output, Shipments and Stocks

(U. S. Department of Interior)					
	Stocks beginning of month short tons	Production short tons	Short tons Sold or Used	Value f. o. b. plant	Stocks end of month short tons
1957 Total		1,647,714	1,579,035		
1958					
November	124,202	140,962	126,619	62,133,129	138,545
December	138,545	152,201	145,125	70,946,494	145,721
Total		1,565,556	1,595,067		
1959					
January	146,086	156,700	127,678	\$62,375,824	175,108
February	175,108	142,116	133,397	65,668,578	183,827
March	183,827	157,189	181,839	82,304,609	159,177
April	159,177	155,213	182,930	90,070,280	131,460
May	131,460	163,857	182,607	89,672,327	112,710
June	112,710	167,323	191,421	93,955,552	88,612
July	88,612	179,194	187,387	91,635,864	80,419
August	80,419	172,816	159,206	77,711,678	94,029
September	94,029	168,206	153,170	74,809,052	109,065
October	109,065	173,742	151,683	73,293,070	131,124
November	131,124	153,665	152,024	74,247,828	132,765
December	132,765	162,996	184,123	89,712,146	111,638

## Aluminum Wrought Products

PRODUCERS' MONTHLY NET SHIPMENTS  
(Bureau of Census — Thousands of Pounds)

	Total	Sheet, Plate, Foil, Rod & Bar	Wire & Cable	Extruded Shapes & Tubing	Powder & Paste
1955 Total	2,805,500	1,642,368	365,391	812,311	35,854
1956 Total	2,870,101	1,577,601	398,602	782,398	28,017
1957 Total	2,677,423	1,396,502	399,040	789,430	28,187
1958					
June	228,587	118,767	28,674	74,580	2,248
July	229,654	126,160	24,678	72,194	2,642
August	213,548	115,376	23,581	67,953	3,154
September	231,168	125,937	23,287	75,269	2,665
October	254,023	128,967	24,442	85,038	2,163
November	216,249	121,190	17,771	71,666	1,723
December	235,377	130,474	26,253	72,979	1,806
Total	2,624,911	1,441,385	285,355	821,249	25,742
1959					
January	235,463	132,361	26,480	70,309	2,246
February	230,733	131,564	21,740	71,364	2,028
March	271,642	161,285	21,940	81,276	2,578
April	293,554	166,942	25,468	93,475	3,178
May	320,786	184,664	28,532	99,308	3,641
June	341,389	195,476	30,156	107,038	3,901
July	373,060	211,850	39,902	111,661	4,708
August	247,833	126,512	29,411	85,380	2,537
September	262,749	140,313	25,843	89,986	2,419
October	287,081	154,669	27,614	97,478	2,697
November	247,260	136,516	20,528	83,594	2,304
December	268,155	152,007	24,210	84,504	2,606

## Aluminum Castings Shipments

(Bureau of Census)

BY TYPE OF CASTING

	Total (Thousands of Pounds)	Sand	Permanent	Die	All Other
1954 Total	609,066	155,738	213,968	232,726	6,800
1955 Total	833,058	171,757	298,115	354,804	8,282
1956 Total	801,036	171,763	245,421	376,108	7,736
1957 Total	751,656	144,121	232,326	369,086	...
1958					
August	45,034	9,034	14,426	21,505	...
September	52,796	10,261	16,241	26,254	...
October	55,699	10,932	17,189	27,511	...
November	55,793	10,539	16,942	28,264	...
December	59,487	10,874	18,970	29,579	...
Total	596,790	117,421	186,949	292,599	...
1959					
January	62,927	10,907	20,606	21,349	...
February	62,846	10,627	21,127	31,021	...
March	73,351	12,412	26,964	33,949	...
April	72,976	12,700	26,153	33,992	...
May	68,268	11,979	25,283	30,877	...
June	66,471	12,306	24,927	29,092	...
July	56,911	11,581	20,410	24,786	...
August	55,904	11,130	17,824	26,818	...
September	66,193	12,309	21,506	32,239	...
October	67,499	12,958	21,781	32,640	...
November	54,557	10,813	16,326	27,303	...
December	64,939	12,409	19,902	32,523	...

METALS, MARCH, 1960

## Virgin Aluminum

Ingot (30 lb.) 99½% Plus, Delivered  
Monthly Average Prices

	(Cents Per Pound)			
	1957	1958	1959	1960
Jan.	27.10	28.10	26.80	28.10
Feb.	27.10	28.10	26.80	28.10
Mar.	27.10	28.10	26.80	...
Apr.	27.10	26.10	26.80	...
May	27.10	26.10	26.80	...
June	27.10	26.10	26.80	...
July	27.10	26.10	26.80	...
Aug.	28.10	26.77	26.80	...
Sept.	28.10	26.80	26.80	...
Oct.	28.10	26.80	26.80	...
Nov.	28.10	26.80	26.80	...
Dec.	28.10	26.80	27.361	...
Aver.	27.517	26.889	26.847	...

## Magnesium Wrought Products Shipments

(Bureau of Census)

(Thousands of Pounds)

	1956	1957	1958	1959
Jan. . .	2,188	2,130	1,271	1,271
Feb. . .	1,901	2,522	1,280	1,691
Mar. . .	1,946	2,388	1,398	1,717
Apr. . .	2,279	2,511	1,479	2,089
May . .	2,462	2,230	1,443	1,644
June . .	2,302	1,881	1,709	1,946
July . .	2,002	1,428	1,227	1,681
Aug. . .	2,523	1,540	1,823	1,823
Sept. .	2,031	1,501	1,807	1,807
Oct. . .	861	1,453	1,983	2,220
Nov. . .	2,141	1,230	1,662	1,320
Dec. . .	2,452	1,102	1,622	1,675
Total	24,975	21,915	18,702	...

## Cadmium Averages

(Cents Per Pound)

N. Y. Monthly Averages  
Cents per lb. in ton lots

	1957	1958	1959	1960
Jan.	170.00	155.00	145.00	148.50
Feb.	170.00	155.00	145.00	150.00
Mar.	170.00	155.00	145.00	...
Apr.	170.00	155.00	120.00	...
May	170.00	155.00	120.00	...
June	170.00	155.00	120.00	...
July	170.00	155.00	120.00	...
Aug.	170.00	155.00	120.00	...
Sept.	170.00	152.60	120.00	...
Oct.	170.00	145.00	*140.00	...
Nov.	170.00	145.00	140.00	...
Dec.	166.40	145.00	140.00	...
Aver.	169.70	152.30	132.00	...

\* As of Oct. 1, 1959, for lots of up to one ton.

# Steel Ingot Production

(American Iron and Steel Institute)

Period	Estimated Production		— All Companies		TOTAL	Calculated weekly production, all companies (net tons)
	OPEN HEARTH	BESSEMER	Net tons	% of capacity		
1954 Total	80,327,494	73.6	2,548,104	53.2	5,436,054	52.0
1955 Total	102,840,585	81.6	3,227,997	67.4	9,147,567	81.2
1956 Total	101,657,776	87.0	2,475,138	54.9	8,582,062	71.3
1957 Total	7,795,541	75.0	148,458	43.4	873,779	71.5
1958 Total	7,572,555	75.3	145,867	44.1	850,896	71.9
1959 Total	7,764,000	74.7	117,000	34.2	832,000	68.1
1960 Total	75,888,392	62.0	1,396,348	34.7	7,972,623	55.4
1961 Total	8,280,985	77.1	120,005	39.5	729,675	63.7
1962 Total	8,640,000	88.0	129,000	47.0	757,000	73.1
1963 Total	10,216,474	95.1	184,892	60.9	929,784	81.1
1964 Total	9,884,332	95.0	196,000	66.2	964,850	87.0
1965 Total	10,117,968	94.2	200,887	66.1	1,024,401	89.4
1966 Total	9,521,053	91.6	185,794	63.2	941,056	84.8
1967 Total	4,540,182	42.2	66,493	21.9	526,025	45.9
1968 Total	1,171,342	10.9	...	...	267,935	23.4
1969 Total	1,249,398	12.0	...	...	285,619	25.8
1970 Total	1,385,490	12.9	...	...	319,043	27.8
1971 Total	6,290,659	60.5	92,361	31.4	754,793	68.0
1972 Total	10,468,534	92.4	205,666	67.7	1,033,668	90.2
1973 Total	8,169,997	64.5	1,380,283	38.6	5,532,514	63.2
1974 Total	10,510,616	97.7	211,132	73.2	1,046,675	85.6
1975 Total	9,714,000	96.6	216,000	80.1	944,000	82.5

# Steel Ingot Operations

(Percentage of Capacity as Reported by American Iron & Steel Institute)

Week	Beginning	1957	1958	1959	1960
Jan. 4...	98.4	56.1	76.2	95.3	
Jan. 11...	96.4	57.0	73.6	95.7	
Jan. 18...	96.6	55.5	74.6	95.4	
Jan. 25...	97.6	54.0	72.6	94.2	
Feb. 1...	97.1	54.0	76.9	94.3	
Feb. 8...	97.7	53.5	83.8	95.7	
Feb. 15...	97.8	50.9	83.7	93.8	
Feb. 22...	96.0	54.6	88.5	94.4	
Feb. 29...	97.1	53.1	90.3	92.8	
Mar. 7...	93.8	52.4	92.0	93.1	
Mar. 14...	93.5	52.5	92.9	91.5	
Mar. 21...	92.4	50.6	92.9	...	
Mar. 28...	90.6	48.6	93.2	...	
Apr. 4...	90.3	48.5	93.3	...	
Apr. 11...	90.4	46.8	93.8	...	
Apr. 18...	88.7	47.9	93.5	...	
Apr. 25...	87.0	47.8	94.2	...	
May 2...	86.7	49.4	92.0	...	
May 9...	84.2	52.3	92.9	...	
May 16...	86.4	56.4	93.4	...	
May 23...	88.0	58.1	93.6	...	
May 30...	87.5	62.5	93.7	...	
June 6...	86.5	84.0	92.0	...	
June 13...	85.2	64.9	92.5	...	
June 20...	84.0	61.7	87.8	...	
June 27...	78.5	51.0	78.2	...	
July 4...	78.7	53.4	79.5	...	
July 11...	79.3	54.9	38.7	...	
July 18...	79.4	57.3	12.9	...	
July 25...	79.4	57.8	12.2	...	
Aug. 1...	79.8	58.8	11.2	...	
Aug. 8...	80.6	60.5	11.8	...	
Aug. 15...	82.1	62.6	11.3	...	
Aug. 22...	82.2	63.5	11.7	...	
Aug. 29...	81.0	61.7	11.5	...	
Sept. 5...	81.9	65.9	11.6	...	
Sept. 12...	82.1	65.6	12.6	...	
Sept. 19...	82.2	67.3	12.8	...	
Sept. 26...	82.6	70.4	12.8	...	
Oct. 3...	82.8	71.6	12.8	...	
Oct. 10...	80.9	74.2	13.0	...	
Oct. 17...	80.2	74.8	13.1	...	
Oct. 24...	79.7	75.0	13.1	...	
Oct. 31...	78.0	74.5	13.0	...	
Nov. 7...	77.7	74.5	45.6	...	
Nov. 14...	76.0	74.1	78.9	...	
Nov. 21...	72.1	73.7	89.7	...	
Nov. 28...	71.5	73.5	93.6	...	
Dec. 5...	69.2	73.5	96.5	...	
Dec. 12...	67.7	74.5	96.3	...	
Dec. 19...	53.7	74.5	94.9	...	
Dec. 26...	59.0	73.6	96.3	...	

# Blast Furnace Output

(American Iron and Steel Institute)

Period	Estimated Production		— All Companies		TOTAL	Calculated weekly production, all companies (net tons)
	OPEN HEARTH	BESSEMER	Net tons	% of capacity		
1951 Total	70,487,880	74.8	71,332,741	93.3		
1952 Total	81,888,065	82.9	82,168,591	84.3		
1953 Total	74,987,721	85.0	75,842,789	95.5		
1954 Total	58,119,882	88.7	58,988,117	71.6		
1955 Total	77,114,078	88.7	77,800,831	92.7		
1956 Total	75,301,134	66.4	75,965,475	88.9		
1957 Total	6,569,074	58.8	6,627,911	92.9		
1958 Total	6,454,450	65.0	6,519,478	88.4		
1959 Total	5,711,242	68.6	5,779,879	81.0		
1960 Total	5,212,624	69.1	5,244,444	62.8		
1961 Total	78,557,011	78.2	79,339,671	91.4		
1962 Total	4,785,269	69.1	4,854,444	62.8		
1963 Total	4,016,276	67.9	4,064,225	53.2		
1964 Total	4,418,778	45.1	4,463,353	57.8		
1965 Total	3,787,907	39.3	3,827,209	51.2		
1966 Total	4,048,328	25.4	4,073,796	52.7		
1967 Total	4,396,285	26.4	4,422,748	59.1		
1968 Total	4,277,515	26.6	4,304,183	55.7		
1969 Total	4,799,955	31.3	4,831,329	62.1		
1970 Total	5,941,042	31.8	5,972,390	67.8		
1971 Total	5,335,985	36.9	5,372,958	76.0		
1972 Total	5,907,888	39.2	5,946,183	79.5		
1973 Total	6,025,385	47.5	6,072,890	78.8		
1974 Total	57,298,644	46.5	57,298,644	63.6		
1975 Total	6,260,395	48.5	6,211,823	77.9		
1976 Total	6,047,398	45.2	6,192,672	85.3		
1977 Total	7,461,760	48.2	7,510,051	93.4		
1978 Total	7,338,372	54.3	7,392,606	95.0		
1979 Total	7,683,759	64.3	7,747,996	96.4		
1980 Total	7,231,631	58.3	7,289,946	93.7		
1981 Total	3,550,159	23.3	3,573,550	44.5		
1982 Total	...	...	947,779	11.8		
1983 Total	...	...	949,103	12.2		
1984 Total	...	...	1,017,659	12.7		
1985 Total	4,199,101	20.1	4,219,273	54.2		
1986 Total	7,638,359	65.7	7,704,087	95.0		
1987 Total	60,322,426	48.2	60,774,738	...		
1988 Total	7,753,753	76.3	7,830,097	95.5		

# Steel Castings Shipments

(Bureau of Census)

Period	Estimated Production		— All Companies		TOTAL	Calculated weekly production, all companies (net tons)
	OPEN HEARTH	BESSEMER	Net tons	% of capacity		
1951 Total	2,101,604	1,507,413	594,191			
1952 Total	1,925,116	1,476,352	448,767			
1953 Total	1,829,277	1,290,016	431,830			
1954 Total	1,184,096	880,158	303,938			
1955 Total	1,530,694	1,166,706	363,988			
1956 Total	1,931,987	1,512,290	419,697			
1957 Total	146,397	113,216	33,181			
1958 Total	127,115	98,436	28,679			
1959 Total	120,787	92,125	28,662			
1960 Total	1,766,191	1,261,301	404,890			
1961 Total	120,722	94,717	26,005			
1962 Total	103,297	79,708	23,589			
1963 Total	106,233	82,195	24,038			
1964 Total	91,464	69,121	22,343			
1965 Total	87,002	66,086	20,916			
1966 Total	92,681	71,624	21,237			
1967 Total	68,802	48,618	20,184			
1968 Total	80,886	59,816	21,070			
1969 Total	85,277	64,586	20,691			
1970 Total	95,389	73,367	22,022			
1971 Total	85,267	65,788	19,479			
1972 Total	103,800	81,360	22,440			
1973 Total	1,114,939	859,125	255,814			
1974 Total	105,392	82,693	22,709			
1975 Total	110,280	86,013	24,267			
1976 Total	131,317	103,848	27,469			
1977 Total	134,344	104,890	29,454			
1978 Total	135,359	105,804	29,555			
1979 Total	143,624	111,725	31,899			
1980 Total	106,790	83,541	23,249			
1981 Total	98,014	79,188	18,826			
1982 Total	99,731	79,963	19,768			
1983 Total	105,570	84,850	20,720			
1984 Total	109,460	86,026	23,434			
1985 Total	103,800	81,360	22,440			

# Galvanized Sheet Shipments

(American Iron & Steel Institute)

Period	Estimated Production		— All Companies		TOTAL	Calculated weekly production, all companies (net tons)
	OPEN HEARTH	BESSEMER	Net tons	% of capacity		
1957	235,902	186,649	279,244	323,073		
1958	205,048	167,627	281,637			
1959	206,836	196,885	311,961			
1960	198,585	206,368	328,759			
1961	206,657	231,318	317,059			
1962	239,037	277,180	350,333			
1963	167,247	239,883	180,787			
1964	186,790	253,263	N.A.			
1965	183,962	258,723	N.A.			
1966	212,886	290,157	N.A.			
1967	190,389	253,909	N.A.			
1968	159,363	266,472	301,911			
1969	2,392,637	2,828,848	2,772,835			
1970	N.A.	N.A.	N.A.			

# SHIPMENTS OF TIN-TERNEPLATE

(American Iron & Steel Institute)

	(Net Tons)			
	—Hot Dipped—		—Electrolytic—	
	1959	1960	1959	1960
Jan.	30,304	32,525	417,210	493,828
Feb.	24,602	.....	442,625	.....
Mar.	46,705	.....	597,408	.....
Apr.	54,906	.....	689,998	.....
May	64,110	.....	689,964	.....
June	62,965	.....	673,819	.....
July	36,381	.....	244,719	.....
Aug.	N.A.	.....	N.A.	.....
Sept.	N.A.	.....	N.A.	.....
Oct.	N.A.	.....	N.A.	.....
Nov.	21,782	.....	296,641	.....
Dec.	31,487	.....	464,080	.....
Total	412,123	.....	4,858,511	.....
N.A. = Not available.				

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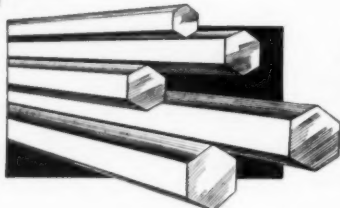
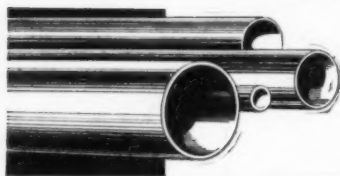
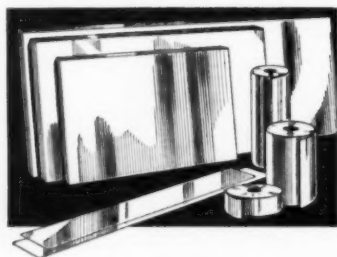
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